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Vaping and Edibles: Self-Reported Usage Patterns Among Teens In and Out of Treatment

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ABSTRACT

Objective
This article examines one key aspect of the Substance Abuse Subtle Screening Inventory (SASSI) Institute's forthcoming third iteration of the Adolescent Substance Abuse Subtle Screening Inventory (SASSI-A3). Overall project aims were to revise the second version of the adolescent SASSI (SASSI-A2), and to update new symptom-related identifiers of substance use disorders in adolescents according to the diagnostic and statistical manual of mental disorders, Fifth Edition (DSM-5) guidelines.

Methods
We added new questions regarding cannabidiol (CBD) edible consumption and the extent of vaping to review and subsequently address these dangers in teens. Identifying these patterns will inevitably direct the course of subsequent clinical interviews and treatment planning. Early intervention is a critical component towards preventing possible negative outcomes for substance misusing teens.

Results
This aspect of the research demonstrated a connection between a higher acknowledged usage pattern of teens in treatment *versus* teens not in treatment. Correlations between beliefs associated with marijuana legalization, marijuana usage by family and friends, tobacco use, connection between age at first use, and the onset of regular usage patterns were also shown to be significantly higher among teens in treatment.

Conclusions
Teens that begin using alcohol, drugs, and tobacco early in adolescence are more likely to engage in vaping and edible usage. They are also more likely to use at a more frequent rate. In addition, teens who are surrounded by family and friends who engage in marijuana use are more likely to be supportive of its recreational use and legalization. This acknowledged information on the SASSI-A3 can help direct treatment planning early in the counseling relationship and provide a gateway for bringing family in the treatment and education process.

Keywords
Adolescents; Vaping; Edibles; Tobacco; Marijuana; Cannabis.

INTRODUCTION

Cannabis legalization in the United States for both medical and recreational use has had an impact on how it is consumed (e.g., vaping and edibles) by both adults and adolescents. Studies demonstrate cannabis use by adults often occurs in conjunction with other modes of marijuana use, especially among recreational users.[1,2] Teens in particular however, are especially vulnerable to the escalation of vaping and use of edibles (cannabis-infused candy, bakery items, etc.) because marketers of these products promote them in ways that make them seem quite appealing to youth.[3] It should be no surprise therefore, that as a result of this widespread exposure, teen curiosity about vaping and edible consumption has increased to an alarming degree.[4]

Dating back to the early twentieth century, there were two prevailing schools of thought as pertained to acceptable marijuana use and its prohibition.[5] More recent claims that marijuana

has medicinal benefits create additional challenges for adolescent prevention efforts as they contrast with messages of its harmfulness.[6] The earlier mainstream messages suggested that marijuana use was a harmless source of mood alteration, was not dangerous, nor produced serious long-term deleterious effects. Even Harry Anslinger, the first commissioner of the newly formed Federal Bureau of Narcotics went on record essentially saying cannabis use was "no big deal." He called the idea that it made people mad or violent an "absurd fallacy."[7] Interestingly, prior to the passing of the Marijuana Tax Act in 1937, which outlawed possessing or selling pot, Anslinger drastically changed his position and as a consequence, he made it his mission to rid the U.S. of all drugs—including cannabis. As a result of the sensationalization of Anslinger's rhetoric and the fear mongering it produced, the nationwide attitude towards cannabis began to fall in line with Anslinger's, he even testified before Congress in hearings for the Marijuana Tax Act. His influence played a major role in the introduction and passage of the Tax Act which outlawed possessing or selling pot.

But as the years progressed, studies revealed that there did exist serious and often long-term consequences associated with the use of cannabis, hashish and similar cannabinoids. Perhaps basing their findings on these theories produced a period of mass hysteria seeking total prohibition and in fact making its possession felonious in 1937 as per Anslinger and his crew. Originally published in 1966 in The Saturday Evening Post, this revived post stated the controversies associated with how benign marijuana use was, but in particular when compared to "harder drug" use such as heroin or cocaine:

> *To many college students, marijuana is illegal but safe, and heroin is dangerous, and therefore uncool. The few students who use heroin are referred to as "sickies" by even the most Bohemian of students. Most important, they suddenly become "square." They have allowed the body to dominate, and they have exhibited vulnerability and dependence; cool people do not depend. Most important, with their glazed faces and drug obsession they scare even the habitual marijuana users, or "potheads."*[8]

More recent research however, suggests that although perhaps not as dangerous as "harder drug use" there do exist serious concerns about extreme usage patterns and the initiation of other drug use as a result of marijuana initiation and escalation. The tetrahydrocannabinol (THC) content, or potency, of marijuana, as detected in confiscated samples, has been steadily increasing from about 3% in the 1980s to 12% in 2012.[9] This increase in THC content raises concerns that the consequences of marijuana use may be worse now than in the past.[10]

Over the past few decades, the amount of THC in marijuana has steadily climbed; today's marijuana has three times the concentration of THC compared to 25-years-ago. The higher the THC amount, the stronger the effects on the brain—likely contributing to increased rates of marijuana-related emergency room visits.[11] The substance abuse and mental health services administration (SAMHSA) further reports that contrary to popular belief, marijuana is, in fact, addictive. Research studies show that one in six people who start using the drug before the age of 18 can become addicted.[11]

In addition, this increase in THC potency over time also raises questions about the current relevance of the findings in older studies on the effects of marijuana use, especially studies that assessed long-term outcomes. The unfortunate reality however, is that THC ingested while vaping or consuming edibles is more addictive than originally thought, and its continuous use can expose teens to very high-levels and often dangerous, even life-threatening concentrations of the substance. Indeed, early and regular marijuana use predicts an increased risk of marijuana addiction, which in turn predicts an increased risk of the use of other illicit drugs.[12] Researchers have even demonstrated that such marijuana use in teens, including edibles, puts the adolescent at a higher risk of schizophrenia or psychosis.[13] Over the years epidemiological studies have also demonstrated that people who use marijuana early in life have an increased vulnerability for addiction to other substances.[9,14,15] These studies suggest that the earlier a teen begins to use cannabis, the more at-risk s/he may be for developing a cannabis use disorder, and studies support this notion.[16] In 2018, more than 11.8 million young adults reported marijuana use in the past year.[17] In recent Congressional testimony, Hearing on Cannabis Policies for the new Decade,[18] the National Institute on Drug Abuse (NIDA) Director Dr. Nora Volkow reported that frequent cannabis use during adolescence is associated with changes in areas of the brain involved in attention, memory, emotions, and motivation leading to adverse cognitive and behavioral effects.

Additional studies focusing on tobacco use among teens, the first most notably conducted by the Journal of the American Medical Association, have shown definite correlations between juvenile e-cigarette use, and the likelihood of later traditional cigarette use. "*Research tells us those teens who vape may be at risk for transitioning to regular cigarettes*," according to Volkow, "*so while we have celebrated our success in lowering their rates of tobacco use in recent years, we must continue aggressive educational efforts on all products containing nicotine.*"[19] Teens using e-cigarettes may be more likely to start smoking tobacco, thus the need to monitor this phenomenon closely as well. Studies have also shown that the adolescent brain is not fully developed, further complicating an already exacerbated issue. When teens vape marijuana, they experience dangerous side-effects which become heightened especially when they do so with alcohol and other drug substances.[20] Research has shown that vaping tobacco also causes an adolescent's brain to become more susceptible to addiction to other drugs, such as methamphetamine and cocaine.[17,21] Recently, scientists have reported seizures in teens as a direct result of increased vaping and upon closer examination documentation of a slight, but noticeable, increase in these reports.[22]

The most recent advances within social media and enhanced communication streams have had deleterious effects on getting teens to understand and appreciate the immediate and lasting dangers of vaping and ingesting drug-laced edibles. Marketing efforts targeting teens have only exacerbated the problem. As a result, addressing these issues has become even more challenging, despite teens' willingness to be forthright in reporting their use of both substances.[23] For years, beliefs that drugs are "cool" or harm-

less indicate that adolescents will be more likely to use drugs.[24] As marijuana legalization increases in momentum, it also increases its availability and will likely create the introduction of new formulations of marijuana used for vaping and edibles with potentially higher potencies.[6] Many teens believe and have reached consensus among their peers, that marijuana use is safer than alcohol, and the use of other drugs. Many state that it is "*not harmful because it occurs naturally*," or their beliefs that it's uses in various forms are non-addictive.[25] Results from the monitoring the future (MTF) survey in 2018 showed a very dangerous trend; it is estimated that three million teens were vaping, 30-40% of which were vaping marijuana as well.[26] Alarmingly, the MTF 2019 survey, reported that vaping showed the second largest one-year jump ever tracked for any substance in the 45-year history of the survey.[27] So indeed the facts are, that these challenges are dangerous, and very real.

Our present study reviews teen respondents' answers to questions administered on the third iteration of the adolescent Substance Abuse Subtle Screening Inventory (SASSI-A3). These questions were directly related to vaping, nicotine use, and the ingestion of edibles containing drugs. This article focuses on the teen self-report patterns of tobacco use, vaping and edibles sections of the data; thus, we limited our study scope to questions related only to these topics. Initially, we review our study methods, protocols and procedures. Then we will examine some of our findings; offer our conclusions and suggest future directions in our hope that we can assist in helping stem the tide of these dangerous use patterns.

METHODS

Sampling Procedures

The SASSI Institute engages in research to evaluate the psychometric properties of our various substance use measures and to enhance their accuracy and clinical utility. This section reviews our sampling and analyses procedures for collecting data *via* administration of SASSI-A3 for our validation project. For this part of the study, we reviewed only questions about the teens who acknowledged use of tobacco, vaping and edibles. We discuss how their responses demonstrate the current usage patterns in teens in treatment, *versus* those who are not in treatment. You may also contact The SASSI Institute for reprints of articles that present additional procedural and more elaborate methodological discussions on the development and validation of the adult SASSI-4 and the adolescent SASSI-A3 substance use disorder screening inventories.[23,28]

Human Rights Protections and HIPAA Adherence

Overall Risk/Benefit Assessment: This project entailed minimal risk to participants in that study participation consisted of providing anonymous responses on a screening survey regarding alcohol and drug-related experiences and attitudes. The risk of harm is thus no greater than would be encountered in standard psychological testing. In addition, treatment participants were invited to participate in the study by assessment professionals who use the SASSI screening survey in their practices and who have an established professional relationship with the respondent. Clinical licensure, certification, and code of ethics require that counselors consent their clients for treatment with full disclosure of expectations and rights in the client-counselor relationship, including the counselor's agreement to act in the best interest of the client. Further, both parents and teens decided whether to provide permission and assent to study participation. Standard of care for clinical participants was to answer the current version of the adolescent screening survey, SASSI-A2, as part of the clinical services their counselors presently provide. As in other behavioral survey research, participants may, on occasion, feel uncomfortable answering some of the survey questions. But as further protection and to mitigate against these risks, we gave participants the option of skipping any question/s or withdrawing from study participation at any time without incurring any penalty or rescinding any rights to which they would otherwise be entitled.

Participants

Our total sample pool consisted of 1,065 teenagers between the ages of 13 and 18 (mean=15-years-old). Fifty-eight percent were Male, 42% Female. Teens in this group identified themselves as White (54%), Black/African American (13%), Hispanic (22%), American Indian or Alaskan Native (1%), Asian, Native Hawaiian or Pacific Islander (3%), Multiracial/Other (5%), and 2% did not answer. Three percent reported being employed full-time, not employed (77%), part-time (17%), volunteer (2%), and 1% did not answer. Eighty percent reported living with their parents, living with other relatives (4%), living with friends (<1%), in a group home (1%), in residential treatment (8%), and 7% did not answer. Shown in Table 1 are the client demographic characteristics broken down by treatment sample (n=515) and non-treatment sample (n=550). The following analyses include percentages for the entire teen sample (n=1065) and separated out by treatment and non-treatment sample n's unless otherwise specified.

All cases were provided by clinicians working in service settings throughout the U.S. Census Regions (Northeast, Midwest, South, West). These professionals served in a variety of venues including substance use treatment and criminal justice programs, community corrections, private clinical practices, behavioral health centers, and social service organizations. All clinicians were qualified SASSI users who administered the SASSI-A3 *via* the SASSI Institute SUD web-based screening application. In appreciation for the use of their anonymous responses, The SASSI Institute made a $5 donation to the teen's choice of a youth or pet charity.

Non-treatment participants (n=550) were community respondents aged 13-18 from throughout all U.S. Census Regions who have never been in treatment for substance use disorders. These responses were collected by the contract research organization Ipsos Public Affairs (Ipsos) from their registered KnowledgePanel®, which is designed to be representative of the United States. Ipsos allowed for expedient, random, and representative community samples to be collected in a short time frame. Upon completion, qualified parents of the teen completing the survey received a cash-equivalent incentive worth $5 to share with their teen.

Table 1. *Participant Characteristics of the Treatment and Non-Treatment Samples*

Characteristics	Treatment (n=515) %	Non-Treatment (n=550) %
Clinical Diagnosis		
Mild substance use disorder	17.67	
Moderate substance use disorder	14.56	
Severe substance use disorder	34.76	
Criterion negative	33.01	
Gender		
Male	65.44	50.91
Female	34.56	49.09
Missing	0	0
Employment Status		
Employed/Full-time	1.17	5.45
Employed/Part-time	12.82	20.91
Not employed	84.66	70.00
Volunteer	1.36	3.45
Missing	0	0.18
Race/Ethnicity		
Black or African American	17.28	9.45
American Indian or Alaska Native	0.97	1.45
Asian, Hawaiian or Pacific Islander	0.97	5.64
Hispanic	29.90	14.00
White or Caucasian	43.69	62.73
Multiracial	5.83	4.91
Other/Unknown	1.36	1.82
Living Situation		
Parents	60.39	98.18
Other Relatives	7.77	0.91
Friends	0.39	0
Group Home	1.75	0
Residential	15.53	0
Other/Unknown	14.17	0.91
Education (years)		
M	8.54	9.38
SD	1.57	1.71
Age (years)		
M	15.41	15.37
SD	1.42	1.73

Data Collection Procedures for Teens in Treatment for Substance Use Disorder

We facilitated a separate research module on the SASSIOnline platform in order to allow participating counselors to administer the research survey to participants. We encrypted all data transmissions and de-identified client information so that all identifiable client information was maintained as encrypted data. To further protect the privacy of study participants and confidentiality of the study data, each administration of the screening survey was automatically assigned a SASSIOnline platform-generated sequence of characters to readily and singularly identify each case for the duration of the study. Parental consent and teen assent were verbally obtained prior to participation by their counselor. Respondents were also given the option to discontinue their participation at any time or have their completed survey withdrawn from the study by informing their counselor. Our entire research protocol and procedures were reviewed by the Advarra Institutional Review Board (IRB) prior to study commencement to ensure that participants were treated in accordance with HIPAA guidelines and regulations.

Data Collection Procedures for Teens Not in Treatment for Substance Use Disorder

The SASSI-A3 survey was conducted on Ipsos's KnowledgePanel®. Our target population consisted of non-institutionalized adult parents of 13-18-year-olds residing in the United States. Parents were asked to complete an initial battery of questions about their household and teens within the household. If qualified, parents were then asked to pass the survey to a randomly-selected age eligible teen who completed the remainder of the survey. Ipsos randomly sampled households with at least one eligible adult. Selected panel members received an email invitation to complete the survey and were asked to do so at their earliest convenience.

Measures

Research Version of the SASSI-A3: Participants completed the research version of the SASSI-A3 which consisted of 87 true-false items and 24 face-valid alcohol and other drug frequency items that measure how often (0=never, to 3=repeatedly) respondents have engaged in and experienced effects from the use of alcohol and other drugs within a specified time frame. There are two possible outcomes: "high probability" or "low probability" of substance use disorder (SUD). Additional methodological considerations, procedures and findings are reviewed elsewhere.[23] For the present study; we focused only on teen responses to direct questions about vaping, edibles, and tobacco use and not the SASSI-A3 screening outcome.

Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition: If participants were in treatment, clinicians' diagnoses regarding the presence or absence of substance use disorders were obtained in accordance with the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) symptom criteria.[29] Counselors indicated the presence or absence of the 11 DSM-5 SUD symptoms, and specified for what class of drug the symptom was evidenced within the time period (past 12-months, lifetime) for which they conducted each diagnostic evaluation.

DATA ANALYSIS AND RESULTS

Teens were asked to report their age at first use of alcohol or drugs ranging from less than 12 through 18. The mean age reported for the entire group (n=1065) was 14, treatment sample (mean=13), and non-treatment (mean=14). Forty-one percent of the teens reported having never tried drugs or alcohol, treatment sample (5%), and non-treatment sample (75%). Also reported was age when they started using alcohol or drugs frequently. The mean age for

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frequent use was 15, treatment sample (mean=14), and non-treatment sample (mean=16). Sixty-seven percent reported that they have never used regularly, treatment sample (37%), and non-treatment sample (95%). We also inquired about their frequency of alcohol and drug use. Table 2 reviews responses for the sample groups, as well as totals for the entire sample.

Table 2. *Current Alcohol or Drug use for the Treatment and Non-Treatment Samples**

Characteristic	Treatment (n=515) %	Non-Treatment (n=550) %	Combined (n=1065) %
Frequency			
More than twice a week	20.6	1.3	10.6
About twice a week	7.6	0.4	3.8
About once a week	4.9	0.9	2.8
Between 1 and 3 times a month	10.5	2.4	6.3
Less than once a month	17.7	7.3	12.3
None	38.8	87.5	63.9
Missing	0.0	0.4	0.1

**"Current" refers to active use at the time of survey completion.*

Counselors working with teens in the treatment sample completed a DSM-5 diagnostic checklist for the purpose of diagnosing the client with or without a SUD. Sixty-seven percent of the teens were diagnosed with a SUD and 33% were not. Preferred drug of choice was also provided on the 67% diagnosed with an active SUD (n=345); with the majority (90%) diagnosed with a Cannabis Disorder followed secondly by an Alcohol Use Disorder (20%). Other SUD diagnoses included Hallucinogens (6%), Inhalants (1%), Opioids (4%), Sedative/Hypnotics (8%), Stimulants (7%), and 5% within the "other category." Note that some teens were diagnosed with more than one SUD. Of the teens diagnosed with any SUD, 28% reported tobacco use, 34% used drug-laced edibles, and 68% vaped various substances (including cannabis). Table 3 depicts use of tobacco, edibles, and vaping for the entire sample. The teens also reported vaping frequency. In the combined sample, "never vaped" was the most reported at 71%; for the treatment sample (47%), for the non-treatment sample (94%). Table 4 depicts frequencies for other timeframes.

Table 3. *Current Tobacco, Edible, and Vaping Use for the Treatment and Non-Treatment Samples**

Characteristic	Treatment (n=515) %	Non-Treatment (n=550) %	Combined (n=1065) %
Tobacco User			
Yes	18.8	1.5	9.9
No	81.2	98.2	90.0
Missing	0.0	0.4	0.2
Edible User			
Yes	23.9	2.4	12.8
No	76.1	96.4	86.6
Missing	0.0	1.3	0.7
Vaping			
Yes	52.6	6.0	28.5
No	47.4	93.6	71.3
Missing	0.0	0.4	0.2

**"Current" refers to active use at the time of survey completion.*

Table 4. *Frequency of Vaping During Entire Life for the Sample Groups*

Characteristic	Treatment (n=515) %	Non-Treatment (n=550) %	Combined (n=1065) %
Frequency			
Never	47.4	93.6	71.3
Once or twice	22.9	4.0	13.1
Several times	16.1	1.8	8.7
Repeatedly	13.6	0.2	6.7
Missing	0.0	0.4	0.2

The items regarding the use of tobacco, edibles, vaping, and vaping frequency are included as part of complete scales on the SASSI-A3 questionnaire. These scales are: face-valid other drugs (FVOD); symptoms (SYM); and subtle attributes (SAT). Reliability analyses were conducted on these scales and demonstrated the following coefficient omegas: FVOD 0.95, SYM 0.87, and SAT 0.70.

Additionally, the two sample groups were asked about whether or not they "*support marijuana legalization*." Sixty-four percent of the teens in treatment supported legalization and 50% reported their family and friends use it. Conversely, thirty-nine percent of teens not in treatment supported legalization, and 18% reported use by family and friends.

We then split the sample groups (treatment and non-treatment) into sub-samples based on their states' mandates on "legality of cannabis" (medical and/or recreational) to review their corresponding use of edibles and vaping. In states where usage is legal (by adults and/or with a prescription; n=80), 15% of treatment teens acknowledged using edibles, and 39% reported vaping. Within the non-treatment teen sample in those states (n=390), 3% acknowledged using edibles, and 6% reported vaping. In states where cannabis is illegal (n=435), 25% of the teens in treatment reported edible use and 53% reported vaping. Interestingly, none of the non-treatment teens in those states (n=210), acknowledged using edibles, while only 2% reported vaping.

DISCUSSION

This study's objective was to review teens' acknowledged use of tobacco, edibles, and the vaping of various substances in adolescents who were both in treatment, and not in treatment. The most common age of onset reported by the "non-treatment" group for alcohol or other drugs was fourteen years of age. The treatment group reported a slightly younger age of onset, 13. Teens in treatment also reported younger frequent onset of use patterns (14 years of age) than their non-treatment counterparts (mean=16).

The likelihood of developing a SUD is greater for those who begin using in their early teens and marijuana and tobacco are usually the first addictive substances people consume.[16] Of the teens diagnosed with a SUD in our treatment group, 90% had a cannabis use disorder and 47% of the teens in treatment reported vaping. Not surprisingly, and in accordance with our previous studies, alcohol use disorder was the second most common diagnosis.[23]

Teens within the treatment sample were almost twice as likely to support legalization of marijuana than those who were not, and half of them reported that their friends and family use marijuana. The use of drugs by family members and their open-minded attitudes toward use by teens predict a greater risk of adolescent drug use.[28,30,31] There are presently 34 states where marijuana is legal for medical purposes and 12 of them have also legalized adult recreational use. Teens in treatment in states where marijuana is legal, reported 5 times more drug-laced edible usage and 6 times the rate for vaping, than the non-treatment teen residents of those states. In states where marijuana is illegal (with the exception of low-level THC content cannabidiol (CBD) oil), treatment teens reported 25 times more drug-laced edible usage and 27 times the vaping rates than their non-treatment counterparts. By contrast, when reviewing teen drug use as a whole, those in states where marijuana is not legal, were 3 times more likely to ingest drug-laced edibles, as well as vaping.

Items regarding the use of edibles and vaping are part of the SASSI-A3 FVOD Scale and the SYM Scale. Endorsement of these items demonstrates the teens' willingness to disclose their behavior and usage. Discussion between the client and counselor will be most effective when discussing their acknowledgement of use when the conversation stimulates the client to increased disclosure and greater self-awareness.

LIMITATIONS AND FUTURE RESEARCH

The instrument we used to collect this data, SASSI-A3, is an alcohol and drug screening instrument designed to be used in a pre-diagnostic fashion as an additional source of information during practitioner assessment procedures, to identify teens in need of further evaluation for the presence of an SUD and the potential need for treatment. This is particularly true for teens that may be in denial about their use patterns or may be reluctant to admit such usage. The SASSI-A3 is not designed to be a screening tool used to identify teens who are solely at risk for vaping or edible use. The data used for this study was comprised of a convenience sample we intentionally extracted from the larger validation study, and solely for the intent we outlined earlier. In future studies we hope to investigate the need for a scale to identify possible vaping and dangerous edible usage, incorporating additional interview items to focus specifically on these issues. Because the question items for the present examination were entirely face-valid, it is likely easier for teens to "fake-good" on their responses.[23] As a result, future studies should address the inclusion of subtle items in order to establish greater concordance with client self-report data.

Data used to validate the screening instrument were submitted by practitioners engaged in ongoing programs of substance use assessments and screening with teens. Pursuant to IRB regulations and mandates, incarcerated teens, or those in Foster Care were not included in this study. Research including these settings would extend the generalizability of current findings to these populations, perhaps providing a more holistic understanding of these findings for larger groups of teens.

CONCLUSION

The signs and symptoms of teen alcohol and drug usage can mimic typical teen behavior, so understanding the typical age for the onset of the use of substances can aid in prevention education planning. Early intervention, during very early teen years, has shown to be critical as substance use and its ill effects worsen during later teen years.[32,33] In addition, those that begin early are more likely to continue abusing later in life, further impairing cessation possibilities.

Generally, marijuana grown today has THC concentration levels that are 15 to 25 percent higher than in previous years. In addition, when used in edibles, it can produce a more dramatic and longer lasting high than when smoked or vaped.[34] Through early intervention, educating teens in all states about the dangerousness of increased THC concentrations and their associated dangers, such as the risk of accidental over dose is imperative. The American Family Physician provides an overview with a list of talking points for parents and teens about the various dangers and misconceptions surrounding teen marijuana use.[35] Although not a specific objective of the present study, we highly recommend that parents and caregivers review this, and similar publications for the credible ways of addressing these very real and concerning issues.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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