

## Research Article

# Youth Perspectives about the Impact of COVID-19 on Substance Use

Stepanchak M<sup>1</sup>, Kristman-Valente A<sup>2</sup>, Hadler N<sup>3</sup>, Bayly B<sup>4</sup>, Chang T<sup>5</sup>, Herbert K<sup>6</sup>, Richardson LP<sup>2</sup> and McCarty CA<sup>2\*</sup>

<sup>1</sup>Assessment, Policy Development, and Evaluation Unit, Public Health Seattle-King County, Seattle, USA

<sup>2</sup>Center for Child Health, Behavior, and Development, Seattle Children's Research Institute, Seattle, USA

<sup>3</sup>Department of Mental Health Services, Naval Medical Center San Diego, San Diego, California, USA

<sup>4</sup>Department of Psychiatry, Brigham and Women's Hospital, Boston, Massachusetts, USA

<sup>5</sup>Department of Family Medicine, Institute for Healthcare Policy and Innovation, University of Michigan, Ann Arbor, Michigan, USA

<sup>6</sup>University of Michigan Medical School, Michigan, USA

## Abstract

This study explored the factors that impacted youth substance use during the COVID-19 pandemic from young people's own experiences and perspectives. Youth (n=1,160, ages 14-24) participated in the MyVoice national text-messaging poll where they were asked about their perceptions of the impact of the pandemic on youth substance use in May of 2020. Both adolescents and young adults most reported observing increased substance use during the early pandemic (43.5% and 56.6%, respectively) with alcohol most frequently identified as the substance for which use increased. Thematic content analysis identified mechanisms including coping with the pandemic-related mental health that impacted youth substance use during the pandemic. More adolescents (62.6%) than young adults (47.1%) indicated that access to substances decreased due to the pandemic. Results show that changes in youth substance use during the pandemic varied depending on developmental age and substance type and were influenced by both common and unique contextual factors.

\*Corresponding author: McCarty CA, Center for Child Health, Behavior, and Development, Seattle Children's Research Institute, P.O. Box 5371, M/S: CURE-3, Seattle, WA 98145-5005, USA, Tel: +1 2068848243; Fax: +1 2069853474; E-mail: cari.mccarty@seattlechildrens.org

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## Introduction

In response to the unprecedented health threat of the COVID-19 pandemic, governments across the world enacted quarantine restrictions including stay-at-home orders, social distancing, and closure of schools and universities in March 2020. In the United States, over 70 million young people were affected by school and university closures and restrictions that continued into 2021 [1]. Although young people are at lower risk of severe disease and death from COVID-19, they may be disproportionately impacted by the social isolation and stress that have resulted from these mitigation strategies [2]. Adolescence and young adulthood are times of rapid social and emotional development, with adolescence being a period of substance use initiation and experimentation [3] and young adulthood a period characterized by substance use normalization, peak use, and the development of substance use disorders [4]. Concerns have been raised among the public health and medical communities that the abrupt transition to remote education, prolonged social isolation, and disruption of developmental milestones that young people experienced during the COVID-19 pandemic may contribute to increased substance use among youth [5,6]. While our understanding of the impact of COVID-19 on young people is still limited, studies suggest that the pandemic has had a strong impact on both mental health and substance use among youth [7].

Recent studies have found conflicting trends in the directionality of pandemic related youth substance use, with some reporting decreases in use of specific substances and others reporting increases [8-10]. The impact of the pandemic on adolescent substance use, in particular, is unclear. One longitudinal analysis of a national cohort of 7,800 youth ages 10-14 found that during the pandemic, the overall rate of substance use did not change but the type of substances used did, with alcohol consumption decreasing while use of nicotine and prescription medication increased among young adolescents [11]. The nationally representative Monitoring the Future survey found that among older adolescents, nicotine and vaping declined, but alcohol consumption, including binge drinking, and cannabis use remained stable despite youth perceptions that substances were less available [12]. In contrast, young adults more consistently report increased substance use during the pandemic. In national surveys conducted in the U.S. between April-June 2020, young adults 18-24 years of age were the most likely age group to report initiation or increase of substance use to cope with pandemic-related stress. Another survey of young adults in the U.S. conducted in May 2020 found that young people ages 18-35 reported increases in loneliness and alcohol use in these first several months of the COVID pandemic [7]. Experiences of loneliness and pandemic-related stress have been found to be significantly related to drinking to cope with stress among college students in the U.S., and stress-based drinking is subsequently related to cannabis consumption [13].

The effects of the COVID-19 pandemic on substance use in adolescents and young adults is likely complex and may vary across different developmental periods and types of substances, leading to simultaneous increases and decreases as a result of a multitude of ecological factors. In addition to loneliness and pandemic-related stress several contextual factors, including access to substances, history of previous substance use, and location of residence seem to impact changes in use; however, more research is needed to understand the role these factors play in how the pandemic is impacting substance use among young people. In this study, we sought to explore the factors and motivations that may have both increased and decreased substance use during the COVID-19 pandemic based on the experiences and perspectives of young people themselves. Using qualitative data provides an opportunity to reflect upon the nuanced and sometimes conflicting trends seen in observational studies during this time. Understanding the reasons and underlying mechanisms of youth substance use during the COVID-19 pandemic and the nuances of how the pandemic has impacted substance use among young people is vital to supporting young people’s health and developing prevention and intervention strategies to mitigate the long-term impacts of the pandemic.

## Methods

Our study utilized the MyVoice cohort, a longitudinal national text message survey of youth ages 14-24. Participants in MyVoice were recruited and enrolled via targeted social media advertisements focused on demographic benchmarks based on weighted samples of the American Community Survey for age, gender, race and ethnicity, socioeconomic status, and region of the country (additional MyVoice study details can be found in [14]). Demographic data were collected from participants at enrollment, and enrolled participants were sent weekly surveys with 3-5 questions on health and policy topics impacting youth. Participants earned \$1 per week for responding to these survey questions and could text “stop” at any time to be removed from the study. This study was approved by the University of Michigan Institutional Review Board with a waiver of parental consent for minor participants to enable equitable enrollment.

On May 15, 2020, MyVoice participants were sent four open-ended questions via text message regarding their perceptions of substance use during the COVID-19 pandemic. Iteratively developed questions by a team of youth, methodology experts, and adolescent health researchers resulted in the following language:

- This week is about substance use (juul/vaping, alcohol, marijuana, etc.,) during the COVID-19 pandemic. Do you think substance use among people your age has changed during the pandemic (same/less/more)?
- What do you think are some reasons substance use has changed for you or people your age due to the pandemic, if at all?
- How do you think access to substances has changed for you or people your age due to the pandemic, if at all?
- Do you think the pandemic has affected the use of one type of substance more than others? If yes, how?

One week after the questions were released, all responses were downloaded and prepared for analysis. A codebook was iteratively developed by the study team using an inductive approach. Three team members (NH, KH and BB) independently reviewed and created

memos describing the content of 100-200 responses to each question, which were then discussed and agreed upon to iteratively develop a final set of codes. The codebook was then independently applied to all text responses by three reviewers (NH, KH and BB) with discrepancies between coders resolved through discussion until agreement was reached. Descriptive statistics were then calculated using Excel 2016 for code frequencies and demographic data from participants.

## Results

Out of the 1,160 active MyVoice participants, 972 responded to the survey (83.8% response rate) comprised of 368 adolescents ages 14-17 (37.9%) and 604 young adults ages 18-24 (62.1%). Participant demographic characteristics are summarized in table 1.

Demographic characteristic	Respondents (n=972) n (%) or mean (std)
<b>Age</b>	18.9 (2.8)
14-17	368 (37.9)
18-24	604 (62.1)
<b>Gender</b>	
Male	370 (38.1)
Female	519 (53.4)
Other	83 (8.5)
<b>Race and Ethnicity</b>	
Non-Hispanic Black	93 (9.6)
Non-Hispanic White	546 (56.2)
Hispanic	121 (12.5)
Non-Hispanic Other	212 (21.8)
<b>Education level</b>	
Less than high school*	343 (35.3)
High school grad	149 (15.3)
Some college or tech school	282 (29.0)
Associate’s degree or tech grad	34 (3.5)
Bachelor’s degree or higher	164 (16.9)
<b>Region</b>	
Midwest	357 (36.7)
Northeast	147 (15.1)
South	270 (27.8)
West	198 (20.4)
<b>Received free or reduced lunch</b>	
Yes	340 (35.3)
No	624 (64.7)

**Table 1:** Respondent demographic characteristics.

\*includes respondents still in high school

Table 2 shows the most frequently identified thematic codes by question and illustrative quotes representing each code for adolescents and young adults. In question 1, 43.5% of adolescents and over half of young adult respondents (56.6%) reported that substance use among people their age had increased during the pandemic, while 22.6% of adolescents and 13.8% of young adults felt that substance use was “less likely to happen”. Question 2 asked respondents to share reasons why substance use has changed among people their age. Boredom during stay at home orders (reported by 41.7% and 51.6%), followed by coping with the mental health toll of the

pandemic (reported by 31.5% and 41.0%), and social/ physical restrictions (26.1% and 23.1%) were the top drivers of change in substance use identified by both adolescents and young adults respectively. For adolescents, almost one out four respondents (23.1%) reported that access to substances had an impact on substance use among people their age, whereas only 12.0% of young adults named access as a reason for change. Other reasons youth gave for changes in substance use included financial challenges, such as “having less money from losing jobs” which was reported more frequently by young adults (5.9%) than adolescents (3%). Concerns about health and contracting COVID were reported similarly across the two age groups: 3.6% for adolescents and 3.0% for young adults.

Q1: Do you think substance use among people your age has changed during the pandemic (same/less/more)? (n=958)				
	Adolescents (n= 363)		Young Adult (n=595)	
	n (%)	Representative Quote	n (%)	Representative Quote
<b>More Use</b>	158 (43.5)	“Yes, people may be using them more since they’re just stuck at home” - Age 15	337 (56.6)	“I suspect so. There’s a lot more weed consumption on my Snapchat and Instagram stories recently” - Age 20 “Yes because kids are getting so bored that they are smoking more” - Age 19
<b>Less Use</b>	82 (22.6)	“Less, but only because teenagers are home with their parents and might not be able to get away with it” - Age 16	82 (13.8)	“Decreased because those are very social activities and no one is hanging out anymore” - Age 22
<b>It Depends</b>	26 (7.2)	“More because people are board but less in some crowds because it’s harder to get for some” - Age 16	51 (8.6)	“I think it has increased, especially alcohol which is readily available. Maybe for marijuana and other drugs that are less accessible, the usage may have gone down” - Age 24
<b>Stayed The Same</b>	55 (15.2)	“probably the same amount, the boredom and time to do drugs is probably offset by the inability to actually buy drugs” - Age 17	79 (13.3)	“It’s the same. People are just using them at different times.” - Age 19
Q2: What do you think are some reasons substance use has changed for you or people your age due to the pandemic, if at all? (n=891)				
	Adolescents (n=333)		Young Adult (n=558)	
	n (%)	Representative Quote	n (%)	Representative Quote
<b>Boredom</b>	139 (41.7)	“People are stressed and bored, looking to escape” - Age 16	288 (51.6)	“People are bored inside, and need ways to pass the time or alleviate that boredom” - Age 24

<b>Mental Health</b>	105 (31.5)	“This situation is very stressful and harmful to mental health so a lot of people go to drugs and other things to help cope and forget what is going on in the world” - Age 17	229 (41.0)	“It’s a pretty bleak situation and sometimes people feel like it’s a good way to temporarily escape from reality” - Age 18
<b>Social &amp; Physical Restrictions</b>	87 (26.1)	“people have more free time but are also limited to going out” - Age 16	129 (23.1)	“much more indoor time and closer proximity to parents will probably limit or reduce use, although it could also go up as a coping mechanism for those who can” - Age 21 “The teens are home and with friends more so they may use more” - Age 19
<b>Access</b>	77 (23.1)	“If it had increased, it’s just something to do out of boredom. If it’s dropped, it’s because people can’t get to their dealer” - Age 15	67 (12.0)	“It would be hard to find sources for these things if underage. It could also be readily available and there is more time to partake” - Age 18
<b>Living Environment</b>	35 (10.5)	“Being home with your family may have decreased use” - Age 17 “Maybe they’re more stressed so they use it more. And now they can’t get caught at school” - Age 15	68 (12.2)	“I’m around my family more, and since they do not approve of any substance use, I’ve cut back.” - Age 24 “I think just for me it’s being home more and having more access to alcohol.” - Age 23
<b>Decreased Responsibility</b>	11 (3.3)	“They have less responsibilities now so they’re using substances more” - Age 17	31 (5.6)	“People have fewer responsibilities outside of the house so they have more time to use substances” - Age 18
<b>Finances/work</b>	10 (3.0)	“Maybe substance use has lessened because people my age don’t have the money to buy it and better yet they can’t go out to get it.” - Age 16	33 (5.9)	“Maybe they have been laid off of jobs that previously allowed them to afford such substances” - Age 18
<b>Safety/Health</b>	12 (3.6)	“Because they want to stop the lung damage in case they get the virus” - Age 14	17 (3.0)	“People are concerned about keeping their health in best shape” - Age 19
Q3: How do you think ACCESS to substances has changed for you or people your age due to the pandemic, if at all? (n=907)				
	Adolescents (n= 342)		Young Adult (n=565)	

	n (%)	Representative Quote	n (%)	Representative Quote
<b>Increased Access</b>	23 (6.7)	"I do think access has changed. It's gotten a lot easier" - Age 17	39 (6.9)	"It's more accessible and people are willing to go to great lengths to get some" - Age 18
<b>Decreased Access</b>	214 (62.6)	"It has lowered because people are scared of coronavirus" - Age 14	266 (47.1)	"I think it's been harder for people to get everything" - Age 18
<b>No Change in Access</b>	45 (1.2)	"Probably hasn't changed. If people want to get it from someone older they are probably still supplying it to them" - Age 16	119 (21.1)	"My access has stayed the same" - Age 22
<b>It Depends</b>	17 (5.0)	"For some, less because of deals at school. For some, more, due to access at home" - Age 16	57 (10.1)	"It might be harder for some but for most it's the same" - Age 18
<b>Factors influencing ACCESS to substances</b>				
<b>Social &amp; Physical Restrictions</b>	97 (28.4)	"It's harder to get to since quarantine" - Age 17	116 (20.5)	"Harder when stuck at home" - Age 21
<b>Supply Closures</b>	23 (6.7)	"i think it gets to be less, as stores for substances are closed and online services are slower" - Age 15	45 (8.0)	"I think access is harder because many places are closed" - Age 22
<b>Social Disregard</b>	16 (4.7)	"Kinda since people don't follow the stay at home they're still getting their supplies and people are getting them for use" - Age 17	11 (1.9)	"It hasn't changed for me. But, it may have changed for some people due to there being less regulation enforcement" - Age 22
<b>Increased Demand</b>	4 (1.2)	[None]	12 (2.1)	"Access has decreased since I think demand has increased" - Age 22
<b>Living Environment</b>	8 (2.3)	"Maybe parents are being more strict about those things now." - Age 14	24 (4.2)	"Juuls have reinvigorated nicotine addiction among youth. It's easier to get those. And liquor cabinets are at home so..." - Age 19
<b>Financial</b>	7 (2.0)	"Well with a lot of people losing work the ability to buy drugs has probably become a lot harder" - Age 17	8 (1.4)	"Because people are home with older family and friends as well as have some expendable income" - Age 19
<b>Alternate Access</b>	7 (2.0)	"Not at all, at least not due to the pandemic, they can get them easily online or by a friend" - Age 17	25 (4.4)	"Not much if you're of legal age like I am. You can order pretty much anything online or on GoPuff" - Age 24

<b>Q4: Do you think the pandemic has affected the use of one type of substance more than others? If yes, how? (n=884)</b>				
	Adolescents (n= 334)		Young Adult (n=550)	
	n (%)	Representative Quote	n (%)	Representative Quote
<b>Yes - More Use</b>	105 (31.4)		222 (40.4)	
<b>Alcohol</b>	42 (40.0)	"Yes. Drinking is more common since it's the easiest thing to come by when stuck with family" - Age 17	137 (61.7)	"Based off of what I've seen on social media it seems like people are drinking more." - Age 18
<b>Marijuana</b>	31 (29.5)	"I think more people are using marijuana to cope and stay calm or distracted" - Age 17	73 (32.9)	"Yes, weed sales are WAY up because people really have unlimited time and nowhere to be" - Age 19
<b>Vaping</b>	11 (10.5)	"I think it has ... furthered the use of vapes because teens don't have anything better to do" - Age 16	10 (4.5)	"I would say yes. The reason is because free time has increased and it increased the vaping usage" - Age 22
<b>Tobacco</b>	7 (6.7)	"Yeah probably tobacco cuz it's the easiest to get" - Age 14	9 (4.1)	"Nicotine has been a lot harder to stay away from, just because when you're bored you hit the nicotine and it becomes habitual and without any part of the day that demands you're not hitting it" - Age 22
<b>Hard Drugs</b>	2 (1.9)	"yes, more people might be trying harder drugs" - Age 17	5 (2.3)	"I think it's made harder drugs more used because now you have nothing else to do but experiment" - Age 19
<b>Yes - Less Use</b>	45 (13.5)		58 (10.5)	
<b>Marijuana</b>	12 (26.7)	"I think it has lessened the use of marijuana because of lack of access" - Age 16	9 (15.5)	"I think it just depends on the person, but I also know weed is harder to come by with dispensaries closed" - Age 23
<b>Hard Drugs</b>	12 (26.7)	"things like meth or LSD aren't really possible to buy in a store or grow yourself" - Age 16	10 (17.2)	"Less party drugs like ecstasy" - Age 24
<b>Alcohol</b>	3 (6.7)	"Probably alcohol because people drink it at parties and people aren't having parties during the pandemic" - Age 17	14 (24.1)	"Alcohol use since it is so often consumed in social settings." - Age 22

Vaping	7 (15.6)	"I think Vapes because people had to get them from non essential businesses" - Age 16	11 (19.0)	"I think juul/vaping might be lowered bc people are more afraid of increasing risk for covid" - Age 24
Tobacco	3 (6.7)	"Yes, legal drugs like tobacco likely are used less as legal outlets are harder to come by" - Age 17	4 (6.9)	"More alcohol consumption. Less tobacco" - Age 21
No	127 (38.0)	"Not necessarily. I don't think it favors one substance over others." - Age 16	153 (27.8)	"No, I think the pandemic affected them all equally." - Age 24

**Table 2:** Questions, themes and example participant quotes.

Responses indicated that some factors contributed to both more and less substance use including social and physical restrictions; "stuck at home and restricted from going out", access to substances and suppliers; "Either more or less connection to those who supply them", and the person's living environment; "People my age have less privacy if they live with their families, so it's difficult to use these substances without getting caught", and "People with relaxed parents who let them drink with them in the house". Other themes such as financial challenges; "Maybe they have been laid off of jobs that previously allowed them to afford such substances" and COVID-19 related health concerns; "Because they want to stop the lung damage in case they get the virus" were associated with decreased use, while boredom; "People are stressed and bored, looking to escape" and coping with mental health issues related to COVID-19; "It's a pretty bleak situation and sometimes people feel like it's a good way to temporarily escape from reality" were associated with increases in use.

When asked how access to substances has changed during the pandemic (Question 3), the majority of adolescents (62.6%) but a little less than half of young adults (47.1%) believed that access to substances had decreased due to the pandemic. Some youth also reported that while demand for substances had increased during the pandemic, supply had decreased. Factors like financial access and living environment were seen by some as facilitating decreased access ("I think access might have dwindled due to social distancing and lessened incomes"; "Most access has gotten harder since you're with your family the whole time"), while others considered these as reasons for increased access ("More money, more time, more options"; "The birth of delivery apps means we can get alcohol or nicotine delivered no problem these days"). More young adults believed access to substances had not changed during the pandemic (21.1%) compared to adolescents (1.2%). Alternative ways of accessing substances and young people's disregard for social distancing mandates were the main reasons respondents felt that access to substances had not changed; "I think access has more or less stayed the same due to the large amount of delivery services (e.g. marijuana deliveries to your front door)". Adolescents and young adults reported increased access to substances similarly (6.7% adolescents vs. 6.9% young adults). Despite developmental differences in changes to perceived and personal access to substances, the leading reason for changes to access identified by both adolescents and young adults was social and physical restrictions imposed during the pandemic (28.4% and 20.5%).

We also asked young people whether the pandemic had impacted the use of one type of substance more than others (Question 4). Of the 327 respondents who provided examples of increased substance use, both adolescents and young adults participants felt that the use of alcohol was the most affected (reported by 40.0% adolescents and 61.7% young adults; "Definitely alcohol, cultural coping mechanism") and nearly one third (29.5% adolescents and 32.9% young adults) suggested marijuana use increased ("There isn't pressure to get up early so I can smoke on nights I normally would not have"). The responses of the 103 young people who reported decreases in specific substance use were more divided. Young adults who perceived less use during the pandemic more frequently identified reduced alcohol consumption (24.1%); "Alcohol use since it is so often consumed in social settings," while the most commonly mentioned substances for adolescents were reduced marijuana and hard drug usage (26.7%); "things like meth or LSD aren't really possible to buy in a store or grow yourself". Most responses focused on changes in access to substances and how access has impacted changes in use. Some responses were excluded from table 2 due to insufficient detail. These included respondents who indicated "smoking" without specifying substance type (reported by 11%) and those who indicated "legal drugs" without providing sufficient detail to categorize their response (reported by 8%).

## Discussion

The results of this study show that changes in youth substance use and views of access during the pandemic varied depending on the type of substance and developmental age, as well as contextual factors such as location of residence. Substance use increased for some young people due to boredom during stay at home orders and as a way to cope with the mental health impact of the pandemic, while for others substance use decreased because of financial challenges and concerns about contracting COVID. Access to substances stood out as a key driver of both increases and decreases in use, depending on the type of substance and the person's specific context, primarily for adolescent users. While the proliferation of delivery services and apps meant that alcohol, marijuana, and some nicotine products were easier to access, the availability of other substances like hard drugs and vaping products reportedly decreased. Despite decreased access, adolescent and young adult respondents in our study still reported increases in substance use among people their age, indicating that some young people went out of their way to use substances during the pandemic.

Our results align with several recent studies of youth substance use have also found that access to substances and the type of substances used by young people influenced how use changed during the pandemic [8-10]. Gaiha and colleagues found that young people who were previous users or who reported nicotine dependence increased their use during the pandemic, indicating that changes in use may differ for those who have a history of substance use and that the pandemic may have exacerbated existing substance use behavior [10]. While our study did not specifically explore how previous use impacted current use during the pandemic, more research is needed in this area to understand the pandemic's impact on youth with a history of substance use or dependence.

Some factors, such as social and physical restrictions, were also seen as driving both increases and decreases in substance use for both adolescents and young adults. For some, social isolation and physical restrictions resulted in increased stress and increased substance use

as a way to cope, while for others the decrease in social engagements and less access to social environments where substances are typically used by young people, such as parties, resulted in decreased use. Similarly, the parameters of the youth's living environment was reported to contribute to both increases and decreases in substance use, especially for alcohol. While some young people experienced increased parental supervision and decreased access, others had more access to substances while at home. White and colleagues found a similar trend in their study of alcohol consumption among college students. Young people who moved back in with their parents during the pandemic reported significantly less drinking post-COVID than those who remained with their peers [9]. Similarly, a study of Canadian youth found significant decreases in binge drinking during the pandemic, but no change in the proportion of alcohol users and an increase in frequency of alcohol use among users [8].

Both adolescents and young adults who felt that the pandemic impacted one type of substance more than others reported that alcohol use had increased. Some of these increases were driven by changing family dynamics, like parents providing alcohol at home, while others used alcohol as a coping mechanism for pandemic related stress. Changes in alcohol use and use settings, such as using at home or with parents, can have long term consequences for young people. Although parents may feel that allowing their adolescent to drink can be a method of harm reduction or education around alcohol, this practice has not been shown to decrease adolescent and young adult drinking and in fact is associated with a higher odds of binge drinking, more frequent drinking, faster progression to heavy drinking, and alcohol-related harm [15-17]. Studies from Europe and Australia have also found that parents' drinking and attitudes around drinking influence their children's substance use [18-20]. In addition to changes in family relationships with substances, the increase in drinking to cope while in isolation may be a warning sign of the changing context of youth substance use. While typically adolescents use substances in social settings or with friends [21], the pandemic may be leading to more solitary use and using as a coping mechanism. Using substances alone is associated with coping motives in adolescents and can be a risk factor for later substance use disorder symptoms [22,23]; therefore, this may be an especially important area for intervention and prevention efforts with young people.

Our study has several limitations. While a text-message survey format allowed us to reach a large sample of young people and collect open-ended responses, it did not allow us to capture the full stories and context of participants because we could not follow-up or clarify responses. For example, in some responses young people provided little detail, such as just writing "smoking", which limited our ability to interpret the data. Respondents' different levels of experience with some substances may also influence their knowledge and opinions regarding substance use, which may bias their responses. To minimize confidentiality concerns, we did not ask participants about their personal substance use; therefore, we were unable to assess differences in opinions between users and non-users in this sample. Although the MyVoice cohort is a large cohort of youth from the United States, it is not nationally representative therefore limiting the generalizability of our findings.

Despite these limitations, our findings have several important implications for providers who work with young people. This study supports the concerns in the medical and public health communities about the pandemic's impact on substance use and provides

important context about the multiple factors that may impact how young people's substance use changed during the pandemic. Respondents in our study described different changes in substance use that depended on a person's context, therefore it may not be possible to predict the pandemic's impact on a young person's substance use without understanding their unique situation. As the impacts of the pandemic become more apparent, it will be important for providers to screen all young people for substance use and to take into account their unique context and reasons for use when providing counseling and support.

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## Conflicts of Interest

All authors declare no conflict of interest.

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