Substance Use and Age of Substance Use Initiation during Adolescence

Self-Reported Patterns by Race and Ethnicity in the United States, 2015–19

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December 2021

Introduction

Use of tobacco, alcohol, marijuana, opioids, and other substances during adolescence (i.e., ages 17 or younger) may disrupt brain development (Jordan and Andersen 2017). It also increases the risks of substance use disorder (Chen, Storr, and Anthony 2009; King and Chassin 2007) or psychosocial problems later in life compared with later initiation of substance use (Poudel and Gautam 2017).

Substance use can have immediate and long-term adverse consequences for young people, and evidence shows more long-term consequences for early initiators (NASEM 2019). Preventing or delaying substance use initiation among young people can reduce later-life risks for substance use and substance use disorders (Office of the Surgeon General 2016). Though young people who initiate substance use early likely face other circumstances that affect later substance use, research shows adolescents in the United States who initiate substance use before age 15 are 6.5 times more likely to develop a substance use disorder than those who delay to ages 21 or later (Feinstein, Richter, and Foster 2012). Between ages 13 and 21, the likelihood of lifetime substance use disorder decreases 4 to 5 percent for each year that the initiation of substance use is delayed (Jordan and Andersen 2017). In addition, the duration of substance use disorder is longer for those who initiated substance use earlier; those who initiated use before age 15 face an estimated 29 years of substance use disorder, compared with 18 years for those who initiated use after age 20 (Dennis et al. 2005).

A recent report showed that the mean age at which young people in the United States initiate substance use increased for most substances between 2004 and 2017 (Alcover and Thompson 2020); for example, the mean age of alcohol use initiation increased from 16 to 17 over the study period. However, very little is known about the variation in substance use and initiation ages across racial and ethnic groups, and understanding these patterns is critical for designing culturally effective prevention and early intervention programs.

In this study, we examine variation across racial and ethnic groups in rates of substance use and age of initiation of use for 15 substances using data from the National Survey on Drug Use and Health (NSDUH). We focus on a critical neurodevelopmental period for adolescents ages 12 to 18 and young adults ages 19 to 25. This study is the first to examine similarities and differences in the age at which young people initiate substance use across racial and ethnic groups by specific substances. The substances we examine are alcohol, tobacco, marijuana, cocaine, heroin, hallucinogens, inhalants, methamphetamine, ecstasy, lysergic acid diethylamide (LSD), phenylcyclohexyl piperidine (PCP), pain relievers, sedatives, stimulants, and tranquilizers. We conclude this brief by discussing existing efforts to prevent, screen for, and address substance use among young people and the need to invest and innovate in culturally effective approaches.

Methods

This study is a retrospective analysis of self-reported NSDUH data for 2015 to 2019. The NSDUH is an annual, random, nationally representative survey of the US-civilian, noninstitutionalized population ages 12 and older. It uses a multistage sampling design to assess substance use. After obtaining informed consent, the NSDUH uses computer-assisted self-interviews to collect data on substance use, including age of first use. We analyzed publicly available, deidentified NSDUH data merged across the five study years. For the analysis of substance use rates among young people ages 12 to 25, we assessed the responses of adolescents ages 12 to 18 (n = 77,386) and young adults ages 19 to 25 (n = 60,793). For the analysis of the age of initiation of substance use, we wanted to learn about substance use up to the end of secondary school, which is approximately up to age 19. Thus, we analyzed patterns of initiation of substance use that occurred at or before age 18 among young adults ages 19 to 29 (n = 64,365). We had to use this older sample for the age-of-initiation analysis so people were old enough to self-report substance use before age 19 (i.e., approximately to the end of secondary school). For the age-of-initiation analysis, we show the median age of substance use initiation and the age of early substance use initiation. We define the age of early substance use initiation as the age at the 10th percentile, that is, the age at which 10 percent of the population initiated substance use at a younger age and 90 percent of the population initiated substance use at an older age.

We analyzed 15 substances for seven racial and ethnic groups to estimate substance-specific use. We analyze use of alcohol or tobacco in the past month (where "tobacco" refers to cigarettes, cigars, and smokeless tobacco) and use of marijuana, cocaine, heroin, hallucinogens, inhalants, methamphetamine, ecstasy, LSD, PCP, pain relievers, sedatives, stimulants, and tranquilizers in the past year. Because pain relievers, sedatives, stimulants, and tranquilizers can be prescribed for medical treatment, estimates in

this analysis show self-reported "unhealthy" use (defined in the NSDUH as "misuse"). Unhealthy use is use in any way not directed by a doctor (i.e., use without a prescription of one's own or in greater amounts, more often, or longer than directed). We also compute rates of heavy alcohol use in the past month using NSDUH definitions developed for adults. Those definitions are consuming five or more drinks on the same occasion for men or four or more drinks on the same occasion for women on each of 5 or more days in the past 30 days. Further, "occasion" is defined as at the same time or within a couple hours of each other. All people identified in this analysis as having heavy alcohol use were also identified as having binge alcohol use. Caution should be used in comparing the alcohol and tobacco use estimates with other estimates of substance use, because they are computed for the past month, whereas other measures reflect the past year. In the age-of-initiation analysis, we examine the same substances as we do for the substance use analysis, but we examine the initiation of tobacco use separately.

The NSDUH follows Office of Management and Budget guidelines to classify individuals by Hispanic, Latino, or Spanish origin or descent and the following racial categories: white; Black/African American; American Indian or Alaska Native; Native Hawaiian, Guamanian or Chamorro, Samoan, or other Pacific Islander; Asian; and other (CBHSQ 2017). Respondents may choose multiple racial categories. We use the race and ethnicity combination variable in the publicly available NSDUH dataset, which classifies respondents by Hispanic, Latino, or Spanish ethnicity. We refer to this group as "Hispanic/Latinx" to reflect the different ways people self-identify. We also use the dataset's racial categories, which exclude those who identify as Hispanic/Latinx: white, Black/African American, American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Asian, or two or more races.

To compare estimated rates of use across racial and ethnic groups, we calculated 95 percent confidence intervals for estimates. We also adopted two-tailed t-tests with $p < 0.05$ as the threshold for statistical significance and used white young people as the reference category. To compare estimated ages of substance use initiation across racial and ethnic groups, we used weighted quantile regressions. We again used $p < 0.05$ as the threshold for statistical significance and used white young people as the reference category. Analysis weights account for the complex survey design of the data and follow NSDUH guidelines for calculating and reporting (including suppressing) estimates.

We conducted the analysis using Stata version 15 (StataCorp). The analysis was exempted by the Urban Institute's Institutional Review Board. Data analysis occurred from January 2020 to August 2020.

Limitations

A key limitation of our study is that NSDUH data are self-reported and thus subject to recall and social-desirability biases, and the sample excludes some populations likely to have relatively high rates of substance use (e.g., young people experiencing homelessness or incarceration). In addition, the reported age at which respondents initiated substance use is subject to recall bias, particularly as the period between initiation and reporting lengthens. As a sensitivity check on this, we recomputed the initiation

analyses using a subset of our sample ages 19 to 24 (rather than 19 to 29), and the pattern of results were unchanged. In addition, the measure of tobacco use excludes e-cigarette use. This likely biases the tobacco measure substantially, because 28 percent of high schoolers and 11 percent of middle schoolers reported using e-cigarettes in the last 30 days, and roughly 6 in 10 reported exclusive use of e-cigarettes (Cullen et al. 2019). Despite these limitations, our findings offer up-to-date information that capitalizes on the strengths of the NSDUH, the only survey large enough to support nationally representative estimates of substance use and the age of substance use initiation for racial and ethnic groups.

Results

The following sections describe rates of substance use and the age of initiation of substance use during adolescence. We stratify results by specific substances and by racial and ethnic groups.

Rates of Substance Use

Table 1 shows that rates of substance use were under 3 percent for adolescents ages 12 to 18, except for alcohol (12.7 percent in the past month), tobacco (7.0 percent in the past month), marijuana (15.6 percent in the past year), and opioids (3.5 percent in the past year). The rate of heavy alcohol use in the past month among adolescents was 1.2 percent. In this age group, the rates of substance use among adolescents of color were generally lower than or the same as those of white adolescents, except for marijuana use among American Indian or Alaska Native adolescents. In addition, though adolescents who identify as two or more races had lower rates of use than white adolescents for alcohol, including heavy alcohol use, and marijuana, they had higher rates of hallucinogen, pain reliever, sedative, and tranquilizer use. Rates of use were statistically significantly higher for young adults ages 19 to 25 than for adolescents, except for inhalant use, which was significantly lower for young adults, and PCP use, which was not significantly different.

Among young adults, rates of substance use were under 8 percent, except for alcohol (60.3 percent in the past month), tobacco (30.1 percent in the past year), and marijuana (34.6 percent in the past year). The rate of heavy alcohol use in the past month among young adults was 10.6 percent. The rates of substance use among young adults of color were generally lower than or the same as such rates for white young adults. However, American Indian or Alaska Native young adults and those who identity as two or more races had higher rates of specific substance use than did white young adults. In particular, rates of methamphetamine and tobacco use among American Indian or Alaska Native young adults were higher than such rates for white young adults. Rates of hallucinogen, marijuana, and ecstasy use among young adults who identify as two or more races were higher than such rates for white young adults.

TABLE 1

Any Use and Unhealthy Use of Substances in the Past Year and Use of Tobacco and Alcohol in the Past Month among Adolescents Ages 12 to 18 and Young Adults Ages 19 to 25 in the United States, by Race and Ethnicity and Type of Substance, 2015–19

	All	White^	Black/African American	American Indian or Alaska Native	Native Hawaiian or other Pacific Islander	Asian	Two or more races	Hispanic/ Latinx
Ages 12–18								
N	77,386	40,659	10,301	1,176	387	3,110	4,290	17,463
Past-month use (%)								
Any alcohol use	12.7	15.2	7.9 ***	10.0 ***	9.0 ***	7.2 ***	12.7 ***	11.5 ***
Heavy alcohol use[a]	1.2	1.7	0.3 ***	0.8 ***	0.3 ***	0.4 ***	1.0 ***	0.9 ***
Any tobacco use[a]	7.0	8.9	5.1 ***	12.7	6.1	2.0 ***	8.1	4.9 ***
Past-year use (%)								
Any marijuana use	15.6	16.3	15.8	21.0 **	14.0	6.9 ***	9.2 ***	15.1 **
Any opioid use	3.5	3.5	3.6	3.0	2.9	1.9 ***	4.4 **	3.6
Any heroin use	0.1	0.1	0.0 ***	0.0	n.d.	0.0 **	0.0 ***	0.0
Unhealthy pain reliever use	3.4	3.5	3.5	3.0	2.9	1.9 ***	4.4 **	3.6
Any inhalant use	2.4	2.5	2.1 **	2.2	2.3	1.7 ***	2.9	2.5
Any hallucinogen use	2.4	2.9	1.0 ***	3.7	2.6	1.5 ***	3.9 **	2.2 ***
Unhealthy simulant use	2.2	2.9	0.8 ***	1.6 ***	1.0 ***	1.4 ***	2.9	1.6 ***
Unhealthy tranquilizer use	2.1	2.3	1.4 ***	1.7	1.3	0.9 ***	3.3 **	2.3
Any LSD use	1.3	1.7	0.3 ***	1.0 **	2.3	0.7 ***	1.8	1.1 ***
Any ecstasy use	0.9	1.1	0.5 ***	0.7	0.1 ***	0.6 ***	1.1	0.9
Any cocaine use	0.8	1.0	0.2 ***	0.3 ***	n.d.	0.3 ***	0.9	1.0
Unhealthy sedative use	0.3	0.4	0.1 ***	0.1 ***	n.d.	0.2 ***	1.1 ***	0.3 **
Any methamphetamine use	0.2	0.3	0.1 ***	0.4	0.7	0.2	0.3	0.1 ***
Any PCP use	0.1	0.1	0.0 ***	0.2	n.d.	0.0 ***	0.2	0.1
Ages 19–25								
N	60,793	32,555	8,523	956	353	3,070	2,611	12,725
Past-month use (%)								
Any alcohol use	60.3	67.0	49.7 ***	49.3 ***	44.7 ***	47.6 ***	63.1 ***	54.3 ***
Heavy alcohol use[a]	10.6	13.6	5.1 ***	9.5 **	10.6	4.5 ***	10.1 ***	8.3 ***
Any tobacco use[a]	30.1	35.5	26.8 ***	44.2 ***	28.1 **	13.8 ***	38.1	22.3 ***
Past-year use (%)								

	All	White^	Black/African American	American Indian or Alaska Native	Native Hawaiian or other Pacific Islander	Asian	Two or more races	Hispanic/ Latinx
Any marijuana use	34.6	36.8	35.8	38.3	31.2	20.2 ***	45.3 ***	31.2 ***
Any opioid use	7.1	8.0	5.6 ***	8.1	8.7	3.0 ***	9.7	6.6 ***
Any heroin use	0.6	0.8	0.2 ***	1.1	0.8	0.0 ***	0.6	0.4 ***
Unhealthy pain reliever use	7.0	7.8	5.6 ***	7.7	8.2	3.0 ***	9.7	6.5 ***
Any inhalant use	1.5	1.7	0.9 ***	2.2	1.8	1.0 ***	2.2	1.4
Any hallucinogen use	7.3	8.7	4.0 ***	7.5	4.1 ***	5.1 ***	12.0 ***	5.8 ***
Unhealthy stimulant use	7.3	9.8	2.8 ***	2.9 ***	5.8 **	4.5 ***	9.9	4.8 ***
Unhealthy tranquilizer use	5.1	6.3	3.3 ***	3.6 ***	5.6	1.8 ***	6.3	3.8 ***
Any LSD use	3.5	4.5	1.3 ***	2.6	n.d.	2.1 ***	5.5	2.6 ***
Any ecstasy use	3.6	4.1	2.5 ***	4.4	2.7	3.4	5.7 ***	3.0 ***
Any cocaine use	6.1	7.6	2.1 ***	7.6	4.3 **	2.4 ***	8.3	5.6 ***
Unhealthy sedative use	0.7	0.9	0.2 ***	1.3	n.d.	0.5	1.3	0.4 ***
Any methamphetamine use	1.0	1.1	0.4 ***	2.8 **	1.4	0.4 ***	1.0	0.9
Any PCP use	0.1	0.1	0.1	n.d.	n.d.	n.d.	0.1	0.1

Source: Estimates are from the Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2015–19.

Notes: n.d. = no data; we suppressed data using the NSDUH's suppression criteria for unreliable estimates. LSD = lysergic acid diethylamide. PCP = phenylcyclohexyl piperidine. All racial categories are non-Hispanic/Latinx. Because pain relievers, sedatives, stimulants, and tranquilizers can be prescribed for medical treatment, these measures show self-reported "unhealthy" use (called "misuse" in the NSDUH), defined as use in any way not directed by a doctor (i.e., use without a prescription of one's own or in greater amounts, more often, or longer than directed). In some states, marijuana was not an illicit substance during this period.

/* The difference between this estimate and the estimate for white young people is significantly different from zero at the 0.05/0.01 level, using two-tailed t-tests.

[a] For definitions of "heavy alcohol use" and "any tobacco use," see the Methods section.

Age of Substance Use Initiation

Table 2 shows the age of substance use initiation at or before age 18 across the 15 substances for young adults ages 19 to 29. The table displays the median age of substance use initiation and age of early substance use initiation (defined as the first 10th percentile of ages). Overall, the median age of initiation of any substance use was 15, and the 10th percentile age for early substance use initiation was 12 (data not shown). The median age of initiation of alcohol, marijuana, and smokeless tobacco use was 16, and the early-initiation age was 13. The median age of initiation of cigarette use was 16, and the early initiation age was 12. For inhalant use, the median age of initiation was 15, and the early-initiation age was 10. Initiation of other substances was generally later across all racial and ethnic groups.

We detected no statistically significant differences in median ages of initiation across racial and ethnic groups. However, ages of early substance use initiation differed considerably. At the 10th percentile, Black/African American adolescents generally initiated substance use at the same age as those who are white. The exceptions to this are Black/African American adolescents' earlier use of cigars (age 13 for Black/African American adolescents versus age 14 for white adolescents) and inhalants (age 8 versus age 11). American Indian or Alaska Native adolescents initiated early substance use at the same age as white adolescents for many substances. However, American Indian or Alaska Native adolescents had earlier use of alcohol (age 11 for American Indian or Alaska Native adolescents versus age 13 for white adolescents), hallucinogens (age 9 versus age 15), cigarettes (age 10 versus age 12), and smokeless tobacco (age 11 versus age 13). Asian adolescents generally initiated early substance use at the same age or later than white adolescents, except Asian adolescents had earlier inhalant use (age 7 versus age 11). Adolescents who identify as two or more races initiated any substance use earlier than those who are white (age 11 versus age 12). Hispanic/Latinx adolescents generally initiated substance use at the same age as those who are white. However, Hispanic/Latinx adolescents had earlier use of inhalants (age 10 for Hispanic/Latinx adolescents versus age 11 for white adolescents), hallucinogens (age 14 versus age 15), cocaine (age 14 versus age 15), and methamphetamines (age 13 versus age 14).

Among early initiators, the age of first use varied little across racial and ethnic groups for several substances, including pain relievers (age 13), sedatives (age 13), stimulants (age 14), and tranquilizers (age 14; data not shown). The median age of initiation was 16 for each of these substances (data not shown). In addition, there were generally too few cases of early initiation of heroin, methamphetamine, and PCP use to be estimated and compared for Black/African American, American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, and Asian adolescents and adolescents reporting two or more races.

TABLE 2

Median Age of Initiation of Substance Use and 10th Percentile Age for Early Initiation of Substance Use among Young Adults Ages 19 to 29 in the United States, by Race and Ethnicity and Type of Substance, 2015–19

Median age of initiation

	White^ (*n* = 43,657)	Black/African American (*n* = 11,193)	American Indian or Alaska Native (*n* = 1,274)	Native Hawaiian or other Pacific Islander (*n* = 458)	Asian (*n* = 4,154)	Two or more races (*n* = 3,314)	Hispanic/Latinx (*n* = 16,536)
Any substance use	**15**	**16**	**14**	**16**	**16**	**15**	**15**
Alcohol	16	16	15	16	17	16	16
Cigarette	16	16	15	16	16	15	16
Cigar	17	17	16	17	18	17	17
Smokeless tobacco	16	17	15	17	17	16	16
Marijuana	16	16	15	16	17	16	16
Heroin	17	16	16	n.d.	n.d.	17	17
Inhalant	15	14	15	15	15	15	15
Hallucinogen	17	17	16	17	17	17	17
LSD	17	17	16	18	17	17	17
Ecstasy	17	17	17	17	17	17	17
Cocaine	17	17	16	18	18	17	17
Methamphetamine	16	16	16	17	16	17	16
PCP	16	16	15	n.d.	n.d.	16	17

10th percentile (early) age of initiation

	White^ (*n* = 43,657)	Black/African American (*n* = 11,193)	American Indian or Alaska Native (*n* = 1,274)	Native Hawaiian or other Pacific Islander (*n* = 458)	Asian (*n* = 4,154)	Two or more races (*n* = 3,314)	Hispanic/Latinx (*n* = 16,536)
Any substance use	**12**	**12**	**9*****	**11**	**12**	**11****	**12**
Alcohol	13	13	11***	13	13	13	13
Cigarette	12	12	10***	12	12	12	12
Cigar	14	13 ***	13	14	15	14	14
Smokeless tobacco	13	14	11***	14	14	13	13
Marijuana	13	13	11	12	14	12	13
Heroin	14	n.d.	n.d.	n.d.	n.d.	n.d.	12
Inhalant	11	8***	11	n.d.	7***	8**	10**

	White^ (*n* = 43,657)	Black/African American (*n* = 11,193)	American Indian or Alaska Native (*n* = 1,274)	Native Hawaiian or other Pacific Islander (*n* = 458)	Asian (*n* = 4,154)	Two or more races (*n* = 3,314)	Hispanic/Latinx (*n* = 16,536)
Hallucinogen	15	15	9***	n.d.	14	15	14***
LSD	15	15	n.d.	n.d.	15	15	15
Ecstasy	15	15	15	n.d.	15	15	15
Cocaine	15	15	15	n.d.	16	14	14***
Methamphetamine	14	n.d.	13	n.d.	n.d.	14	13**
PCP	14	n.d.	n.d.	n.d.	n.d.	n.d.	13

Source: Estimates are from the Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUH), 2015–19.

Notes: n.d. = no data; 10th percentile values were suppressed if there were 10 or fewer cases, and median values were suppressed if there were 50 or fewer cases. LSD = lysergic acid diethylamide. PCP = phenylcyclohexyl piperidine. All racial categories are non-Hispanic/Latinx. To be included in the pool of respondents for our analysis of ages of substance use initiation, respondents reported that they initiated substance use at or before age 18. For more information about our methodology, see the Methods section. In some states, marijuana was not an illicit substance during this period.

/* The difference between this estimate and the estimate for white young adults is significantly different from zero at the 0.05/0.01 level, using a quantile regression analysis.

Discussion

Our estimates show that in 2015 to 2019, adolescents ages 12 to 18 reported low rates of substance use across substances; such rates were under 3 percent for all substances, except for alcohol, tobacco, marijuana, and opioids. Young adults ages 19 to 25 reported higher rates of substance use, under 8 percent, but had much higher rates of alcohol, tobacco, and marijuana use (all above about 30 percent). The rates of substance use for both adolescents and young adults of color were generally lower than or the same as rates for those who are white. However, rates of use for some substances were higher among American Indian or Alaska Native adolescents and adolescents who identify as two or more races.

We examined substance use initiation at or before age 18 for young adults in 2015 to 2019. We find that the median age of initiation of substance use, 15, was consistent across racial and ethnic groups and substances. We find differences across racial and ethnic groups in the timing of early substance use initiation (at the 10th percentile of ages). Though the early age of initiation of any substance use was 12, earlier initiation occurred for certain substances for Black/African American and Asian adolescents (inhalant use), American Indian or Alaska Native adolescents (hallucinogen, cigarette, and smokeless tobacco use), adolescents who identify as two or more races (any substance), and Hispanic/Latinx adolescents (inhalant, hallucinogen, cocaine, and methamphetamine use). This suggests prevention and intervention are needed for many groups at ages 11 and earlier.

A need for earlier intervention. Because most 11- and 12-year-olds are sixth graders and in middle school, these findings suggest effective, culturally relevant prevention education and early intervention for substance use are needed as early as elementary school. This is reinforced by research finding that 10 percent of adults ages 18 to 30 who have been admitted to substance use treatment facilities initiated substance use at ages 11 and younger (Strashny 2014). These efforts should recognize that the Drug Abuse Resistance Education program, widely implemented in elementary schools and focused on zero-tolerance and "just say no" concepts, has been found to be inefficacious at reducing substance use (Tremblay et al. 2020). Other interventions developed for elementary-school-age children have shown positive effects, such as the Raising Healthy Children program, which includes parent training (Office of the Surgeon General 2016). However, more investments in developing and testing effective initiatives that span younger ages are needed. In addition, our finding that most adolescents initiate substance use at high school ages and previous research showing that substance use accelerates in high school (Monitoring the Future 2019) emphasize the importance of continued prevention and intervention programming through middle and high school. Efforts to expand early substance use interventions can draw on research on effective communication to parents, families, communities, and policymakers who design and fund these programs (O'Neil, Volmert, and Kendall-Taylor 2016).

Prevention and intervention programs. Research focusing on the voices of adolescents and young adults shows that they identify substance use prevention—without involving law enforcement or the criminal justice system—as one of their highest priorities related to their behavioral health needs (Bunts, West-Bey, and Mitchell 2020). Not involving law enforcement or the criminal justice system is a particular priority for adolescents of color (West-Bey and Flores 2017; West-Bey and Mendoza 2019). In the past

decade, adolescent substance use prevention has expanded from individual-level curriculum-based prevention strategies to community-driven models that recognize the importance of broader youth development programming and of addressing community-level physical, social, and economic risks and protective factors that influence youth behaviors. Examples of promising models include Communities That Care, PROmoting School-community-university Partnerships to Enhance Resilience, and Communities Mobilizing for Change on Alcohol, which have all been shown to decrease substance use among young people (Office of the Surgeon General 2016). Research has shown that addressing the community contexts in which risky behavior occurs, such as by investing in engaging activities (e.g., afterschool programs) that decrease unsupervised youth recreation (Kristjansson et al. 2020), may be more successful than programs designed to change the way adolescents think about the risks of substance use (Steinberg 2007).

Young people need access to a range of interventions, including universal programs that build community resources for and resilience in all young people. They also require targeted interventions to support those who have known risk factors, such as mental health problems (e.g., posttraumatic stress, depression) and substance use, *without* being flagged with a formal substance use disorder diagnosis (Bunts, West-Bey, and Mitchell 2020). Screening, Brief Intervention, and Referral to Treatment, or SBIRT, is a promising practice (Beaton, Shubkin, and Chapman 2016). Targeted efforts to identify and support young people at risk are important components within a broader context of community-driven substance use prevention efforts.

Historical and cultural contexts of youth substance use. In communities of color, young people have emphasized that substance use can be a coping strategy to deal with collective experiences of racism, discrimination, and trauma (West-Bey and Mendoza 2019). Understanding the historical and cultural contexts of substance use is important, because some of the differences in substance use and in the age of substance use initiation documented in our estimates may relate to differences in culture. For example, the early hallucinogen use among American Indian or Alaska Native adolescents observed in this study likely reflects use of peyote as a sacred medicine (Prince et al. 2019).

A significant barrier to providing culturally effective prevention and early intervention for substance use for diverse groups of young people is that much of the standard model of evidence-based substance use care was designed for and tested among white, cisgender, heterosexual populations. The success of efforts to "adapt" existing programs, such as LifeSkills Training, to fit the needs of racially and ethnically diverse young people have been limited (Office of the Surgeon General 2016). Limited attention has also been given to developing new and evaluating established culturally and linguistically effective programming.

Conclusion

Future efforts to address substance use among young people could promote community-led substance use programming aimed at supporting healthy development for adolescents and young adults from different racial and ethnic groups and cultures. Such programming has received very little federal

funding (GAO 2018). This could be implemented through large-scale, systematic efforts to build the evidence base and support successful community-led models. By empowering communities to lead their own culturally effective interventions, listening to young people, and helping provide effective prevention earlier, the Biden administration and the health care system can better support the needs of young people in all communities.

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Acknowledgments

This brief was funded by the Foundation for Opioid Response Efforts. We are grateful to them and to all our funders, who make it possible for Urban to advance its mission.

The views expressed are those of the authors and should not be attributed to the Urban Institute, its trustees, or its funders. Funders do not determine research findings or the insights and recommendations of Urban experts. Further information on the Urban Institute's funding principles is available at urban.org/fundingprinciples.

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