

# Estimating the Prevalence of Substance Use Disorders in the US Using the Benchmark Multiplier Method

Ramin Mojtabai, MD, PhD, MPH

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**IMPORTANCE** Prevalence estimates of substance use disorders in the US rely on general population surveys. However, major population groups, such as homeless individuals and institutionalized individuals, are not captured by these surveys, and participants may underreport substance use.

**OBJECTIVE** To estimate the prevalence of substance use disorders in the US.

**DESIGN, SETTING, AND PARTICIPANTS** The benchmark multiplier method was used to estimate the prevalence of alcohol, cannabis, opioid, and stimulant use disorders based on data from the Transformed Medicaid Statistical Information System (T-MSIS) (the benchmark) and the National Survey on Drug Use and Health (NSDUH) (the multiplier) for 2018 and 2019. T-MSIS collects administrative data on Medicaid beneficiaries 12 years and older with full or comprehensive benefits. NSDUH is a nationally representative annual cross-sectional survey of people 12 years and older. Data were analyzed from February to June 2022.

**MAIN OUTCOMES AND MEASURES** Prevalence of substance use disorders was estimated using the benchmark multiplier method based on T-MSIS and NSDUH data. Confidence intervals for the multiplier method estimates were computed using Monte Carlo simulations. Sensitivity of prevalence estimates to variations in multiplier values was assessed.

**RESULTS** This study included Medicaid beneficiaries 12 years and older accessing treatment services in the past year with diagnoses of alcohol ( $n = 1\,017\,308$  in 2018;  $n = 1\,041\,357$  in 2019), cannabis ( $n = 643\,737$ ;  $n = 644\,780$ ), opioid ( $n = 1\,406\,455$ ;  $n = 1\,575\,219$ ), and stimulant ( $n = 610\,858$ ;  $n = 657\,305$ ) use disorders and NSDUH participants with 12-month *DSM-IV* alcohol ( $n = 3390$  in 2018;  $n = 3363$  in 2019), cannabis ( $n = 1426$ ;  $n = 1604$ ), opioid ( $n = 448$ ;  $n = 369$ ), and stimulant ( $n = 545$ ;  $n = 559$ ) use disorders. The benchmark multiplier prevalence estimates were higher than NSDUH estimates for every type of substance use disorder in both years and in the combined 2018 to 2019 sample: 20.27% (95% CI, 17.04-24.71) vs 5.34% (95% CI, 5.10-5.58), respectively, for alcohol; 7.57% (95% CI, 5.96-9.93) vs 1.68% (95% CI, 1.59-1.79) for cannabis; 3.46% (95% CI, 2.97-4.12) vs 0.68% (0.60-0.78) for opioid; and 1.91% (95% CI, 1.63-2.30) vs 0.85% (95% CI, 0.75-0.96) for stimulant use disorders. In sensitivity analyses, the differences between the benchmark multiplier method and NSDUH estimates persisted over a wide range of potential multiplier values.

**CONCLUSIONS AND RELEVANCE** The findings in this study reflect a higher national prevalence of substance use disorders than that represented by NSDUH estimates, suggesting a greater burden of these conditions in the US.

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**Author Affiliations:** Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland; Department of Psychiatry and Behavioral Sciences, Johns Hopkins University, Baltimore, Maryland.

**Corresponding Author:** Ramin Mojtabai, MD, PhD, MPH, Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, 624 N Broadway St, Room 797, Baltimore, MD 21205 (rmojtab1@jhu.edu).

Access to accurate estimates of the prevalence of substance use disorders (SUDs) in a country is essential for resource allocation and service planning. In many industrialized countries, these estimates typically rely on general population surveys.<sup>1-4</sup> In the US, the annual National Survey on Drug Use and Health (NSDUH), previously known as the National Household Survey on Drug Abuse (NHSDA), has been the main source of information on the prevalence of SUDs for decades.<sup>4-7</sup> However, there are concerns that NSDUH and other general population surveys may not capture all persons with SUDs in the population because they do not cover homeless and institutionalized persons, including those in the criminal justice system, and these population groups often have a higher prevalence of SUDs.<sup>8-10</sup> Furthermore, individuals with SUDs may be difficult to recruit in survey research.<sup>11,12</sup> Even among those who do participate in surveys, many may not fully disclose the extent of their substance use due to the stigma associated with substance use disorders.<sup>6-8,13,14</sup> Such partial disclosure would result in underestimation of SUD prevalence.<sup>15,16</sup>

The extent to which population surveys may underestimate the prevalence of SUDs was highlighted in a 1993 study<sup>6,7</sup> of cocaine use. The study found that actual lifetime cocaine use based on multiple data sources was 2 to 3 times higher than estimates from the NHSDA. A more recent study<sup>17</sup> in which investigators from Massachusetts linked multiple data sources and used the capture-recapture method to estimate the prevalence of opioid use disorder in the state similarly found that the 2015 prevalence of opioid use disorder in the state was nearly 4 times the NSDUH estimate (4.6% vs 1.4%).

Underestimation is not limited to harder drugs, such as cocaine and opioids. Hasin and Grant<sup>18</sup> presented data from the Veterans Health Administration, national emergency department visits, and mortality data indicating a 50% to 115% increase in cannabis use disorder in the first decade of the 21st century. Yet the NSDUH did not record meaningful change in cannabis use disorder in this period.<sup>19</sup>

These studies highlight the benefit of using more than 1 source of data to provide a more accurate estimate of the prevalence of SUDs.<sup>20</sup> There are calls for such data combination strategies both in the US<sup>21</sup> and the European Union.<sup>22</sup> Combining survey data with administrative data is one such strategy.<sup>10,23,24</sup> As an example, Compton and colleagues<sup>10</sup> adjusted NSDUH prevalence estimates based on data from prison and jail inmates. The estimated national prevalence of drug use disorder increased from 2% to 2.5% after this adjustment—a 25% increase.

In this report, the prevalence of SUDs in the US was estimated by combining NSDUH and Medicaid administrative data using the benchmark multiplier method that is commonly used for estimating the prevalence of stigmatized behaviors and health conditions in marginalized population groups not fully captured in general population surveys.<sup>25-29</sup> This method has been used to estimate the prevalence of SUDs in a number of other settings<sup>22,25,26,28,30</sup> and, more recently, to estimate the prevalence of asymptomatic COVID-19 infection.<sup>27</sup> More specifically, I estimate the prevalence of alcohol, cannabis, opioid, and stimulant use disorders in the US in 2018 and 2019 by combining administrative Medicaid data on SUD treatment service use and data from NSDUH for these years.

## Key Points

**Question** What is the estimated prevalence of substance use disorders in the US?

**Findings** In this cross-sectional study, using the benchmark multiplier method and Medicaid administrative data in combination with data from the National Survey on Drug Use and Health for 2018 and 2019, the 12-month prevalence estimates of alcohol use disorder, cannabis use disorder, opioid use disorder, and stimulant use disorder were higher than estimates from the National Survey on Drug Use and Health.

**Meaning** The findings suggest that the prevalence of substance use disorders may be considerably higher than National Survey on Drug Use and Health estimates indicate.

## Methods

NSDUH researchers obtained informed consent from all participants and from parents or guardians of adolescents aged 12 to 17 years. The NSDUH data collection protocol was approved by the institutional review board at Research Triangle Institute International. The present study used publicly available deidentified data deemed exempt from review by the institutional review board of the Johns Hopkins Bloomberg School of Public Health.

## Samples

Medicaid data were drawn from the Transformed Medicaid Statistical Information System (T-MSIS) Substance Use Disorder Data Books for 2018 and 2019.<sup>31,32</sup> The T-MSIS sample comprised 55 887 507 Medicaid beneficiaries with full benefits in 2018 and 55 606 179 in 2019. Medicaid-Expansion Children's Health Insurance Program (CHIP) and separate CHIP beneficiaries who were enrolled only in these programs throughout the year were excluded. The T-MSIS data books include separate counts of beneficiaries who received services for alcohol, cannabis, opioid, and stimulant use disorders. These counts were used as benchmark data for computing the benchmark multiplier estimates in this study. Data from the T-MSIS Data Books are presented as aggregates and do not include any individual identifiers. Outpatient care was the most common SUD treatment setting for Medicaid beneficiaries and counselling the most common form of treatment (eTable 1 in the Supplement).

The NSDUH sampling methods have been described in detail elsewhere.<sup>33</sup> In short, NSDUH uses a multistage area probability sampling design to survey the noninstitutionalized civilian population 12 years and older residing in the US with response rates of 66.6% in 2018 and 64.9% in 2019 according to the American Association for Public Opinion Research standard definitions of Response Rate 2.<sup>34</sup> The public access data files used in this study included 56 313 participants in 2018 and 56 136 in 2019. The survey covers household residents, civilians living in housing on military bases, and individuals in non-institutional group quarters (eg, shelters, rooming or boarding houses, college dormitories, migratory workers' camps, and

halfway houses). Homeless individuals, active-duty military personnel, and institutionalized individuals (eg, those in correctional facilities, nursing homes, mental institutions, and long-term care hospitals) are excluded.<sup>33</sup>

### Assessments

SUDs in NSDUH are ascertained based on the *DSM-IV* definitions of 12-month substance abuse or dependence, implemented in a structured interview administered through computer-assisted self-interviewing. Using computer-assisted self-interviewing to ask questions about sensitive behaviors, such as substance use, has been shown to reduce reporting bias.<sup>33</sup> The analyses focused on 4 groups of SUDs that could be identified in both NSDUH and Medicaid data: alcohol, cannabis (marijuana and hashish), opioid (heroin and prescription opioids), and stimulant (cocaine, methamphetamine, prescription stimulants) use disorders. Across the 2 survey years, 6753 participants (3390 in 2018 and 3363 in 2019) met criteria for alcohol use disorder, 3030 (1426 in 2018 and 1604 in 2019) for cannabis use disorder, 817 (448 in 2018 and 369 in 2019) for opioid use disorder, and 1104 (545 in 2018 and 559 in 2019) for stimulant use disorder.

In addition, in each SUD group, the proportion of participants who had Medicaid coverage and used SUD treatments were computed. These proportions were used as multipliers for computing the benchmark multiplier estimates.

The type of health insurance was ascertained using questions about each type of coverage. For participants younger than 18 years, type of health insurance was ascertained by asking the parent or guardian. Self-reports on public insurance have been shown to be accurate, with 91.4% to 92.7% of self-reports matching enrollment records.<sup>35</sup>

Treatments assessed in NSDUH included SUD treatment in a hospital, inpatient rehabilitation center, outpatient rehabilitation center, mental health center, physician's office, or emergency department. Treatments received only in a self-help group or in a prison or jail setting were not counted for computing the multiplier because these treatments are typically not charged to insurance and would not be reflected in the Medicaid claims data (the benchmark). To assess the impact of this exclusion, in sensitivity analysis, benchmark multiplier estimates were computed based on all forms of SUD treatment, irrespective of insurance coverage.

### Estimation

The benchmark multiplier method is based on estimating the size of a population using data from 2 samples from that population: a well-characterized sample of the population with known size (the benchmark) and a representative sample, typically based on a representative survey of the general population in which some individuals are also in the benchmark sample and the proportion of this latter group in the population of interest can be calculated (the multiplier). Given a benchmark of size  $\hat{N}_x$  and the probability  $\hat{\pi}$  for members of the representative sample to be in the benchmark, the size of the population ( $\hat{N}_y$ ) can be estimated as  $\hat{N}_y = \hat{N}_x / \hat{\pi}$ .

In this study, the population size to be estimated ( $\hat{N}_y$ ) was the population of individuals with each SUD type in the US.

For each SUD type, the  $\hat{N}_x$  was based on the count of Medicaid enrollees with that SUD and  $\hat{\pi}$  was the proportion of NSDUH participants with that SUD who had Medicaid and who used SUD treatment services. The benchmark and multiplier values for each type of SUD for each year and for the combined 2018 to 2019 period are presented in eTable 2 in the [Supplement](#).

Bollaerts and colleagues<sup>26</sup> note that even if  $\hat{N}_x$  and  $\hat{\pi}$  are unbiased,  $\hat{N}_y$  can be a biased estimator of  $N_y$  because of its non-linearity with respect to  $\hat{\pi}$ . The authors proposed a bias-corrected version of  $\hat{N}_y$ , computed as:

$$\hat{N}_y = \frac{\hat{N}_x}{\hat{\pi}} - \frac{1}{n} \hat{N}_x \frac{(1 - \hat{\pi})}{\hat{\pi}}$$

where  $n$  is the size of the representative sample used to estimate  $\hat{\pi}$ . Furthermore, following Bollaerts et al,<sup>26</sup>  $\hat{\pi}$  was assumed to follow a  $\beta$  distribution,  $\hat{\pi} \sim \beta(x + 1, n - x + 1)$ , where  $x$  is the number of individuals in the representative sample who are part of the benchmark (NSDUH participants within each SUD group who are covered by Medicaid and use SUD treatment services).

The  $\hat{N}_y = \hat{N}_x / \hat{\pi}$  for each SUD type was estimated using a separate Monte Carlo simulation model run 1000 times, and 95% CIs were estimated based on the percentiles of the 1000 simulated estimates. For comparison, the prevalence of SUDs was also estimated using the NSDUH data. Because both the benchmark and the multiplier were consistent across 2018 and 2019 (eTable 2 in the [Supplement](#)), they were combined for the main analyses to improve precision.

Producing unbiased estimates using the multiplier method is based on several assumptions. Importantly, it is assumed that the multiplier value based on the survey data are nationally representative—that is, in this case, the proportion of individuals with each type of SUD and Medicaid in the country who used SUD treatment services is the same as the proportion in NSDUH. However, it is plausible that survey participants had less severe forms of SUD and did not use SUD services as commonly as those who did not participate. It is also possible that individuals with SUDs who received SUD treatment would be more likely to endorse SUD criteria. Unfortunately, these possibilities could not be explored using available data. However, it is possible to explore the potential impact of these scenarios in sensitivity analyses. To this end, multipliers were computed for a range of SUD severity, including separately for cases meeting criteria for substance abuse (the less severe form of *DSM-IV* SUDs), assuming that NSDUH grossly oversamples individuals with severe SUDs who are also more likely to use SUD services, and for cases meeting substance dependence criteria (the more severe form of SUDs), assuming that NSDUH grossly oversamples individuals with less severe SUDs. These extreme scenarios were used to derive plausible ranges for prevalence estimates.

Survey weights and other survey elements were taken into account in calculation of NSDUH estimates. Furthermore, prevalence estimates from both the NSDUH and the benchmark multiplier method were multiplied by the US population 12 years and older to estimate the number of people with

**Table 1. Prevalence of Alcohol, Cannabis, Opioid, and Stimulant Use Disorders in the US Based on the Benchmark Multiplier Method<sup>a</sup> and National Survey on Drug Use and Health (NSDUH) 2018-2019**

Substance use disorder	% (95% CI)					
	Combined 2018-2019		2018		2019	
	Multiplier method	NSDUH	Multiplier method	NSDUH	Multiplier method	NSDUH
Alcohol use disorder	20.27 (17.04-24.71)	5.34 (5.10-5.58)	18.99 (14.94-25.02)	5.38 (5.11-5.66)	21.84 (16.89-29.40)	5.29 (4.98-5.63)
Cannabis use disorder <sup>b</sup>	7.57 (5.96-9.98)	1.68 (1.59-1.79)	8.10 (5.70-12.29)	1.62 (1.48-1.76)	7.17 (5.21-10.40)	1.75 (1.62-1.90)
Opioid use disorder <sup>c</sup>	3.46 (2.97-4.12)	0.68 (0.60-0.78)	3.13 (2.56-3.96)	0.75 (0.63-0.89)	3.84 (3.04-5.04)	0.62 (0.53-0.72)
Stimulants use disorder <sup>d</sup>	1.91 (1.63-2.30)	0.85 (0.75-0.96)	2.13 (1.67-2.83)	0.85 (0.74-0.98)	1.74 (1.41-2.22)	0.85 (0.72-1.00)

<sup>a</sup> The multiplier for the benchmark multiplier method was computed as the proportion of participants with substance use disorders in NSDUH who used treatments generally covered by insurance and were covered by Medicaid.

<sup>c</sup> Includes heroin and prescription opioids.

<sup>d</sup> Includes cocaine, methamphetamine, and prescription stimulants.

<sup>b</sup> Includes marijuana and hashish.

**Table 2. Individuals With Alcohol, Cannabis, Opioid, and Stimulant Use Disorders in the US Based on the Benchmark Multiplier Method<sup>a</sup> and National Survey on Drug Use and Health (NSDUH) 2018-2019<sup>b</sup>**

Substance use disorder	No. in 1000s (95% CI)					
	2018-2019		2018		2019	
	Benchmark multiplier method	NSDUH	Benchmark multiplier method	NSDUH	Benchmark multiplier method	NSDUH
Alcohol use disorder	44 991 (38 502-53 611)	14 906 (14 241-15 601)	42 521 (34 376-54 286)	14 978 (14 235-15 758)	47 818 (38 176-62 005)	14 834 (13 946-15 776)
Cannabis use disorder <sup>c</sup>	17 494 (14 104-22 401)	4705 (4429-4998)	17 909 (13 080-25 830)	4503 (4127-4912)	17 209 (12 808-24 307)	4908 (4533-5313)
Opioid use disorder <sup>d</sup>	9450 (8141-11 241)	1906 (1668-2178)	8640 (7067-10 903)	2080 (1747-2475)	10 391 (8260-13 555)	1732 (1478-2029)
Stimulant use disorder <sup>e</sup>	4773 (4110-5669)	2376 (2103-2682)	5663 (4463-7471)	2379 (2070-2733)	4168 (3435-5209)	2372 (2016-2791)

<sup>a</sup> The multiplier for the benchmark multiplier method was computed as the proportion of participants with substance use disorders in NSDUH who used treatments generally covered by insurance and were covered by Medicaid.

years and older in 2018, 2019, and the mean of the 2018 and 2019 population.

<sup>c</sup> Includes marijuana and hashish.

<sup>d</sup> Includes heroin and prescription opioids.

<sup>e</sup> Includes cocaine, methamphetamine, and prescription stimulants.

<sup>b</sup> Estimated counts were computed by multiplying the prevalence estimates from the benchmark multiplier method and NSDUH by the US population 12

each SUD based on either method. Stata version 17.0 (StataCorp) was used for all analyses.

## Results

This study included Medicaid beneficiaries 12 years and older accessing treatment services in the past year with diagnoses of alcohol ( $n = 1\,017\,308$  in 2018;  $n = 1\,041\,357$  in 2019), cannabis ( $n = 643\,737$ ;  $n = 644\,780$ ), opioid ( $n = 1\,406\,455$ ;  $n = 1\,575\,219$ ), and stimulant ( $n = 610\,858$ ;  $n = 657\,305$ ) use disorders and NSDUH participants with 12-month *DSM-IV* alcohol ( $n = 3390$  in 2018;  $n = 3363$  in 2019), cannabis ( $n = 1426$ ;  $n = 1604$ ), opioid ( $n = 448$ ;  $n = 369$ ), and stimulant ( $n = 545$ ;  $n = 559$ ) use disorders. The prevalence of alcohol, cannabis, opioid, and stimulant use disorders according to the multiplier method and NSDUH are presented in **Table 1**. For every SUD type, the benchmark multiplier method estimate was considerably larger than the NSDUH estimate in each year and in the combined 2018 to 2019 period: 2.2 times the NSDUH estimate for stimulant use disorder, 3.8 times for alcohol use disorder, 4.5 times for cannabis use disorder, and 5.1 times for opioid use disorder.

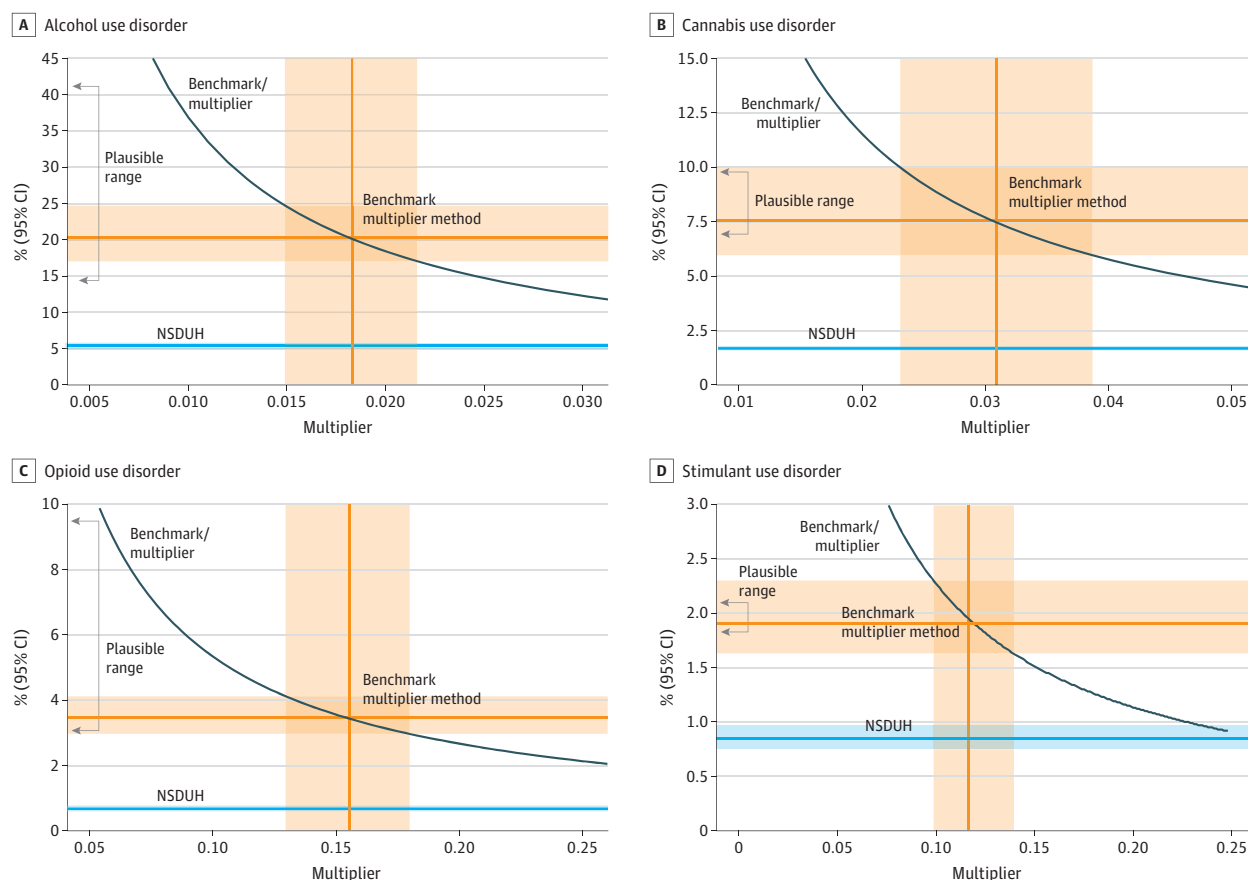
The differences between the NSDUH and the benchmark multiplier method estimates translate into millions of indi-

viduals for each type of SUD (**Table 2**). For example, while the NSDUH estimate of the number of individuals with 12-month opioid use disorder in the US in 2018 to 2019 was less than 2 million, the benchmark multiplier method estimate was more than 9 million.

The differences between NSDUH prevalence estimates and benchmark multiplier method estimates persisted across a broad range of multiplier values for all SUDs (**Figure**). The plausible range for multipliers in these analyses was based on separate estimates of the multiplier value from cases meeting *DSM-IV* abuse and dependence criteria (eTable 3 in the **Supplement**). The upper limit of the plausible ranges of prevalence for alcohol and opioid use disorders were markedly higher than the benchmark multiplier estimates. This is because, compared with participants meeting dependence criteria with these substances, those meeting abuse criteria were much less likely to use SUD services.

In sensitivity analyses in which SUD treatment service use was not limited to those typically covered by insurance, the benchmark multiplier estimates were expectedly somewhat lower due to the higher value of multipliers. Yet even in these analyses, the benchmark multiplier prevalence estimates remained markedly larger than the NSDUH estimates (eTables 4, 5, and 6 in the **Supplement**).

Figure. 12-Month Prevalence Estimates for Substance Use Disorders in the US



Plausible ranges for the benchmark multiplier method estimates were computed based on multiplier values for participants meeting *DSM-IV* substance dependence criteria (lower values) and for those meeting substance

abuse criteria (upper values) for each SUD. NSDUH indicates National Survey on Drug Use and Health 2018-2019.

## Discussion

Data based on the benchmark multiplier method used in this cross-sectional study suggest that SUDs were more common than previous estimates based on the NSDUH surveys suggested. The discrepancy between the benchmark multiplier method estimates and NSDUH was especially pronounced for opioid and cannabis use disorders. This study does not provide any information regarding the reasons for these variations in discrepancy between NSDUH and benchmark multiplier method estimates across SUD types. Opioid use disorders are especially common among marginalized population groups that are not adequately captured in general population surveys.<sup>8</sup> Furthermore, opioid use disorder is highly stigmatized, which may lead to lower probability of endorsing opioid use disorder symptoms.<sup>8,36,37</sup> In contrast, public attitudes have generally become more positive toward cannabis use over the years, in line with the decriminalization of cannabis.<sup>38</sup>

Over the years, a number of studies have provided evidence that NSDUH severely underestimates the prevalence of

SUDs,<sup>6,10,18</sup> though there are few recent national data to compare with the benchmark multiplier method estimates presented here. A study from Massachusetts<sup>17</sup> using the capture-recapture method and multiple administrative data sources estimated the prevalence of opioid use disorders as 4.6% in 2015, almost 4 times larger than the NSDUH estimate for the state.

A number of factors likely contribute to the underestimation of SUDs in general population surveys, such as NSDUH, including selective nonresponse and reluctance to report stigmatized behaviors, such as drug use.<sup>16</sup> Furthermore, general population surveys typically do not cover homeless and institutionalized individuals, who tend to have a higher prevalence of SUDs.<sup>8,39</sup>

The use of benchmark multiplier method partly addresses these limitations by capitalizing on service utilization data covered by Medicaid rather than participation in surveys. Medicaid is the major payer for SUD services in the US, especially among marginalized populations.<sup>40-43</sup> The benchmark multiplier method is especially useful for capturing these population groups that are not well represented in surveys.<sup>25,27,28,44,45</sup> Similar to the present study, many of the previous studies using the benchmark multiplier method capi-



talized on service use registries as benchmarks to estimate prevalence.<sup>46</sup>

While highlighting the limitations of NSDUH in adequately capturing SUDs in the population, this study underscores the utility of representative survey data when combined with other data sources. In conjunction with administrative data, representative population survey data are critical elements for building triangulated evidence regarding the national and local prevalence of SUDs.<sup>18,20</sup>

### Limitations

In interpreting the results of this study, several limitations should be considered. Whereas the accuracy of SUD prevalence estimates based on general population surveys depends on the validity of self-reports of substance use in these surveys and adequate coverage of the population, the accuracy of estimates based on the benchmark multiplier method relies on representativeness of the multiplier values. A number of measures were taken to produce plausible values for the multipliers in this study. First, both the multiplier estimate and the benchmark were based on national data for the same years. Second, the multipliers were computed using the Monte Carlo method, thus accounting for uncertainty in these estimates given the limited sample sizes on which they were based. Third, sensitivity of prevalence estimates to variations in multiplier values obtained from SUD groups with different levels of severity were examined. Lastly, in addition to the combined estimates, separate estimates were computed for each year using benchmark and multiplier data for those years to examine consistency across the years. Nevertheless, the benchmark multiplier-derived prevalence estimates are sensitive to variations in multiplier values and future research with several multipliers would provide more confidence in the estimates.<sup>30</sup>

A further limitation is that the prevalence estimates could not be produced for different population subgroups. SUDs are not uniformly distributed across age, sex, racial, and ethnic

groups and accurate prevalence estimates among different population groups are important for the design of prevention policies and planning of services. Similarly, benchmark multiplier prevalence estimates could not be computed for specific types of substances (eg, separately for individual stimulants) or for less commonly used substances (eg, inhalants and hallucinogens) because of lack of benchmark data for these drugs and smaller sample sizes for estimating the multiplier values for them.

Additionally, NSDUH 2018 to 2019 SUD diagnoses are based on *DSM-IV* criteria. US clinicians also typically base their diagnoses on *DSM* criteria. However, these diagnoses are coded using *ICD-10* clinical codes. The effect of this discrepancy among the coded diagnoses and *DSM-IV* criteria could not be examined in this study. There is some indication that *DSM-5* criteria that allow for mild disorders may be more sensitive to changes in prevalence of cannabis use disorder over time.<sup>19</sup> Furthermore, upgrading the diagnoses from *DSM-IV* to *DSM-5* diagnoses in NSDUH 2020 was associated with increased prevalence estimates for some SUDs compared to previous years.<sup>47</sup> For example, the prevalence of cannabis use increased from 5.3% in NSDUH 2019 to 10.2% in NSDUH 2020 and the prevalence of alcohol use disorder increased from 4.3% to 10%.<sup>4,47</sup> Changes for other SUDs were smaller. These numbers are closer to the benchmark multiplier estimates, but still fall short.

### Conclusions

In the context of the limitations, these data provide an overview of the prevalence of SUDs in the US based on the benchmark multiplier method. The findings suggest a much larger burden of SUDs in the country than that estimated by NSDUH. The updated prevalence estimates of SUDs support greater investment in SUD prevention and treatment services and further efforts to make them more widely available.

### ARTICLE INFORMATION

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