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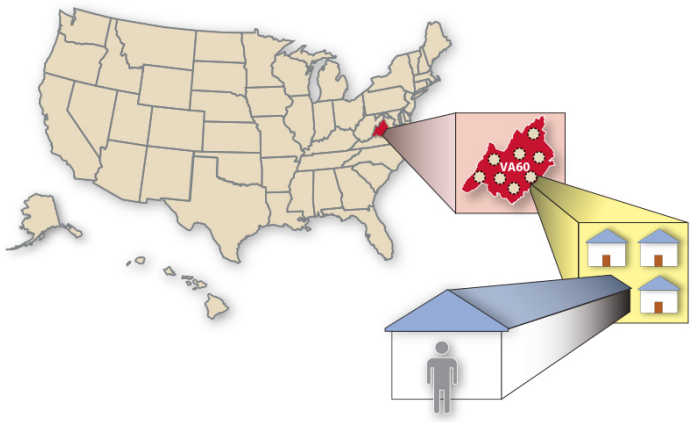
National Survey on Drug Use and Health

The CBHSQ Report

Short Report

June 16, 2016

STATE ESTIMATES OF PAST YEAR SERIOUS THOUGHTS OF SUICIDE AMONG YOUNG ADULTS: 2013 AND 2014



AUTHORS

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INTRODUCTION

Suicide is an avoidable cause of mortality that is a tragedy for all involved—families, friends, neighbors, colleagues, and communities. In 2013, suicide was the 10th leading cause of death in the United States overall, with more than 41,000 deaths by suicide.[1] Among people aged 15 to 24, suicide ranked even higher as the second leading cause of death.[2]

However, individuals who die from suicide represent a fraction of those who consider or attempt suicide. Research suggests that there are more attempted suicides than there are deaths from suicide.[3,4] Out of every 31 adults who attempted suicide in the past 12 months in the United States, there was 1 death by suicide.[5] In addition, people are likely to have thought about suicide before actually attempting suicide. Suicide is of particular concern for young adults because the percentage of adults having serious thoughts of suicide in 2014 was higher among young adults aged 18 to 25 than among adults aged 26 to 49 and adults aged 50 or older (7.5 percent vs. 4.0 and 2.7 percent, respectively).[6] Assessing recent state-level trends in past year serious thoughts of suicide among young adults helps state public health authorities and suicide prevention specialists to better understand and effectively serve their communities.

The National Survey on Drug Use and Health (NSDUH) has information on suicidal thoughts and behavior at the state level. This issue of *The CBHSQ Report* uses data from the 2013 and 2014 NSDUHs to present state (including the District of Columbia) estimates of serious thoughts of suicide in the past year among adults aged 18 to 25. The estimates in this report do not reflect information from adults whose suicide attempts in the past year were fatal. All estimates in this report are based on a small area estimation (SAE) methodology in which state-level NSDUH data are combined with local-area county and census block group/tract-level data from the state to provide more precise estimates.[7] Findings in this report are annual averages based on combined 2013–2014 NSDUH data from 39,000 adults aged 18 to 25. The 2012 and 2013 data are based on information obtained from 45,200 young adults.[8]

In Brief

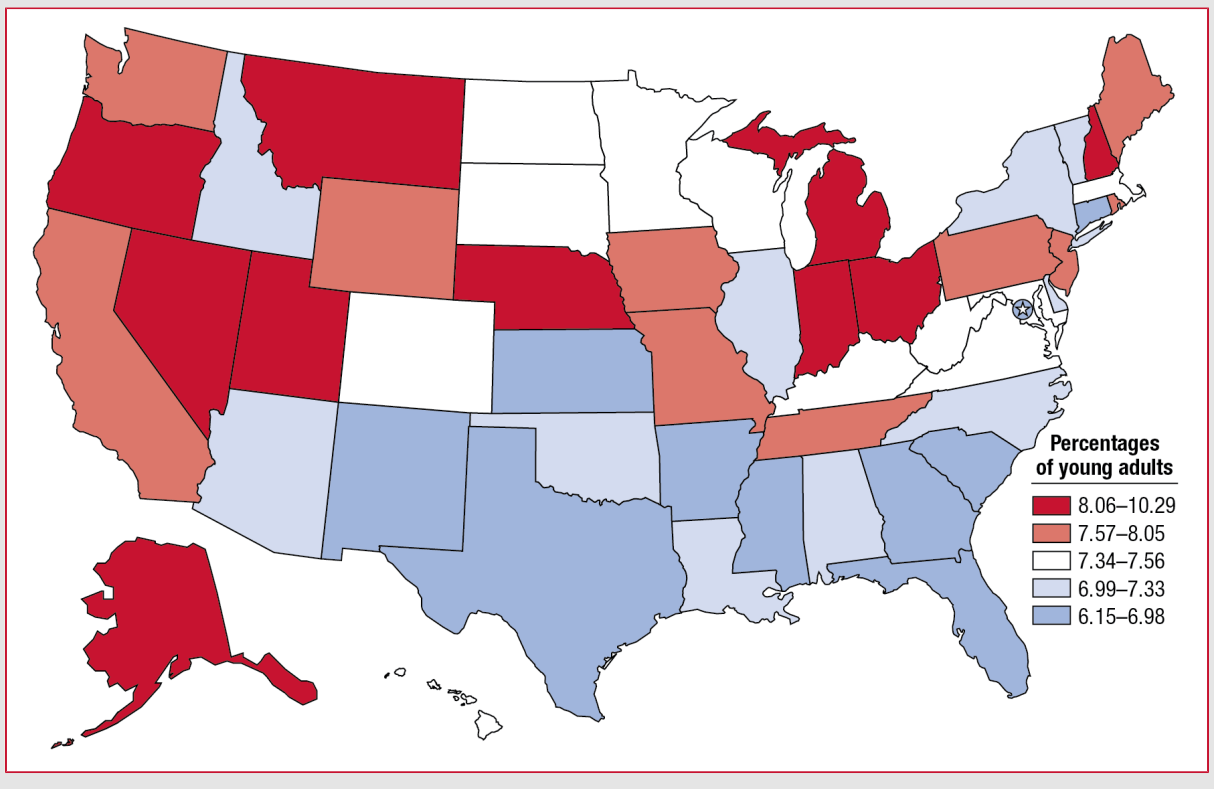
- Based on combined 2013–2014 National Surveys on Drug Use and Health, 2.6 million young adults aged 18 to 25 in the United States had serious thoughts of suicide in the past year.
- Based on combined 2013–2014 National Surveys on Drug Use and Health, about 1 in 13 young adults had suicidal thoughts in the past year.
- Past year serious thoughts of suicide among young adults ranged from 6.2 percent in Texas to 10.3 percent in New Hampshire.
- The prevalence of past year serious thoughts of suicide increased in New Hampshire (when comparing 2013–2014 estimates with 2012–2013 estimates) but remained unchanged in 49 states and the District of Columbia.

Estimates are displayed in tables and a U.S. map (Figure 1). To produce the map showing estimates of past year serious thoughts of suicide, state estimates were first rank ordered from lowest to highest and then divided into quintiles (fifths). States with the lowest estimates (i.e., the lowest fifth) are assigned to the bottom quintile and are shown in dark blue. States with the highest estimates are assigned to the top quintile and are shown in dark red. All other states are assigned to one of three quintiles between the lowest and highest quintiles. Table 1 shows the estimates associated with the map rank ordered from highest to lowest and divided into quintiles.[9] For the estimates in Table 2, states are listed alphabetically. Ninety-five percent confidence intervals are included as a measure of precision for each estimate. Additionally, the combined 2013–2014 data are compared with combined 2012–2013 data to examine changes over time. The inclusion of a common year (i.e., 2013) in these comparisons increases the precision of the difference and the ability to detect statistically significant differences. Any statistically significant difference between 2013–2014 and 2012–2013 is to be interpreted as the average annual change between 2012 and 2014. All changes discussed in this report are statistically significant at the .05 level of significance.

STATE ESTIMATES OF PAST YEAR SERIOUS THOUGHTS OF SUICIDE AMONG YOUNG ADULTS

The combined 2013–2014 NSDUH data indicate that an estimated 2.6 million young adults aged 18 to 25 in the United States had serious thoughts of suicide in the past year. This translates to about 1 in 13 young adults (7.4 percent of the population) having suicidal thoughts in the past year. There were some differences across states. Rates of young adults with past year serious thoughts of suicide ranged from 6.2 percent in Texas to 10.3 percent in New Hampshire (Figure 1 and Table 1).[9]

Figure 1. Serious thoughts of suicide in the past year among young adults aged 18 to 25, by state: annual averages, 2013–2014



Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2013 and 2014.

Table 1. Serious thoughts of suicide in the past year among young adults aged 18 to 25, by quintile group and size of state estimate: annual averages, 2013–2014

State	Census region	Percentage of adolescents	Quintile group
New Hampshire	Northeast	10.29%	5
Utah	West	9.86%	5
Montana	West	8.53%	5
Michigan	Midwest	8.41%	5
Ohio	Midwest	8.33%	5
Nevada	West	8.32%	5
Oregon	West	8.32%	5
Nebraska	Midwest	8.31%	5
Alaska	West	8.30%	5
Indiana	Midwest	8.24%	5
Pennsylvania	Northeast	8.05%	4
New Jersey	Northeast	7.98%	4
Missouri	Midwest	7.94%	4
Rhode Island	Northeast	7.92%	4
Washington	West	7.91%	4
California	West	7.82%	4
Iowa	Midwest	7.78%	4
Wyoming	West	7.71%	4
Maine	Northeast	7.66%	4
Tennessee	South	7.57%	4
Wisconsin	Midwest	7.56%	3
Colorado	West	7.52%	3
South Dakota	Midwest	7.46%	3
Kentucky	South	7.45%	3
Maryland	South	7.44%	3
West Virginia	South	7.44%	3
Minnesota	Midwest	7.42%	3
Hawaii	West	7.41%	3
North Dakota	Midwest	7.39%	3
Virginia	South	7.34%	3
Massachusetts	Northeast	7.34%	3
Vermont	Northeast	7.33%	2
Alabama	South	7.31%	2
Idaho	West	7.30%	2
Delaware	South	7.27%	2
Illinois	Midwest	7.22%	2
New York	Northeast	7.20%	2
Oklahoma	South	7.19%	2
North Carolina	South	7.17%	2
Arizona	West	7.04%	2
Louisiana	South	7.04%	2
Florida	South	6.98%	1
South Carolina	South	6.91%	1
New Mexico	West	6.88%	1
Connecticut	Northeast	6.85%	1
Georgia	South	6.78%	1
Arkansas	South	6.67%	1
Mississippi	South	6.64%	1
Kansas	Midwest	6.51%	1
District of Columbia	South	6.17%	1
Texas	South	6.15%	1

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2013 and 2014.

Of the 10 states with the highest rates of past year serious thoughts of suicide among young adults, 5 were in the West (Alaska, Montana, Nevada, Oregon, and Utah), 4 were in the Midwest (Indiana, Michigan, Nebraska, and Ohio), and 1 was in the Northeast (New Hampshire).[10] Of the 10 states with the lowest rates, 7 were in the South (Arkansas, District of Columbia, Florida, Georgia, Mississippi, South Carolina, and Texas) and 1 each was in the West, Midwest, and Northeast (New Mexico, Kansas, and Connecticut, respectively).

CHANGES OVER TIME

Nationally, there was no change in the percentage of past year serious thoughts of suicide between 2012–2013 and 2013–2014 (Table 2). At the state level, 49 states and the District of Columbia experienced no change in serious thoughts of suicide between 2012–2013 and 2013–2014. The only difference observed was in New Hampshire, where the percentage of 18- to 25-year-olds having serious thoughts of suicide increased from 8.4 percent in 2012–2013 to 10.3 percent in 2013–2014.

Table 2. Serious thoughts of suicide in the past year among young adults aged 18 to 25, by state: annual averages, 2012–2013 and 2013–2014

State	Annual averages: 2012–2013		Annual averages: 2013–2014	
	Percent	95% Confidence interval	Percent	95% Confidence interval
National	**7.33**	**(7.02–7.65)**	**7.44**	**(7.11–7.79)**
Alabama	6.70	(5.40–8.29)	7.31	(5.90–9.02)
Alaska	7.68	(6.27–9.37)	8.30	(6.70–10.25)
Arizona	7.70	(6.22–9.50)	7.04	(5.61–8.81)
Arkansas	6.82	(5.51–8.40)	6.67	(5.32–8.34)
California	7.94	(6.96–9.05)	7.82	(6.84–8.93)
Colorado	7.16	(5.75–8.88)	7.52	(6.07–9.27)
Connecticut	6.78	(5.44–8.40)	6.85	(5.45–8.57)
Delaware	6.43	(5.15–8.00)	7.27	(5.90–8.94)
District of Columbia	6.30	(5.01–7.90)	6.17	(4.89–7.75)
Florida	6.81	(5.94–7.81)	6.98	(6.05–8.03)
Georgia	6.57	(5.27–8.16)	6.78	(5.52–8.30)
Hawaii	8.20	(6.62–10.12)	7.41	(5.83–9.37)
Idaho	7.61	(6.18–9.34)	7.30	(5.87–9.05)
Illinois	7.32	(6.43–8.33)	7.22	(6.19–8.40)
Indiana	8.10	(6.62–9.87)	8.24	(6.66–10.15)
Iowa	7.32	(5.92–9.01)	7.78	(6.26–9.64)
Kansas	6.72	(5.39–8.35)	6.51	(5.21–8.12)
Kentucky	7.60	(6.17–9.33)	7.45	(6.00–9.20)
Louisiana	7.01	(5.66–8.66)	7.04	(5.61–8.80)
Maine	7.69	(6.30–9.36)	7.66	(6.17–9.48)
Maryland	7.51	(6.08–9.25)	7.44	(5.96–9.25)
Massachusetts	7.71	(6.24–9.49)	7.34	(5.85–9.16)
Michigan	8.90	(7.87–10.05)	8.41	(7.32–9.66)
Minnesota	7.13	(5.66–8.95)	7.42	(5.96–9.22)
Mississippi	6.59	(5.30–8.17)	6.64	(5.31–8.27)
Missouri	6.84	(5.51–8.47)	7.94	(6.34–9.91)
Montana	9.39	(7.63–11.51)	8.53	(6.94–10.44)
Nebraska	7.92	(6.48–9.64)	8.31	(6.75–10.20)
Nevada	7.90	(6.37–9.77)	8.32	(6.67–10.34)
New Hampshire	8.35*	(6.82–10.19)	10.29	(8.40–12.56)
New Jersey	7.52	(6.07–9.27)	7.98	(6.51–9.74)
New Mexico	7.14	(5.71–8.89)	6.88	(5.51–8.57)
New York	6.77	(5.86–7.82)	7.20	(6.15–8.41)
North Carolina	7.10	(5.72–8.78)	7.17	(5.82–8.79)
North Dakota	7.70	(6.23–9.48)	7.39	(6.01–9.07)
Ohio	7.68	(6.76–8.71)	8.33	(7.19–9.64)
Oklahoma	7.48	(6.02–9.24)	7.19	(5.74–8.97)
Oregon	8.37	(6.82–10.23)	8.32	(6.75–10.21)
Pennsylvania	7.79	(6.83–8.88)	8.05	(6.93–9.34)
Rhode Island	7.34	(5.94–9.04)	7.92	(6.31–9.91)
South Carolina	7.14	(5.84–8.72)	6.91	(5.51–8.63)
South Dakota	7.25	(5.86–8.94)	7.46	(6.01–9.22)
Tennessee	7.72	(6.32–9.40)	7.57	(6.04–9.45)
Texas	5.83	(5.03–6.74)	6.15	(5.24–7.21)
Utah	9.16	(7.49–11.14)	9.86	(7.92–12.22)
Vermont	7.88	(6.40–9.66)	7.33	(5.80–9.21)
Virginia	7.44	(5.97–9.24)	7.34	(5.96–9.01)
Washington	7.39	(5.94–9.16)	7.91	(6.39–9.77)
West Virginia	7.70	(6.24–9.47)	7.44	(5.96–9.25)
Wisconsin	7.88	(6.46–9.59)	7.56	(6.04–9.43)
Wyoming	7.57	(6.19–9.23)	7.71	(6.19–9.57)

* Difference between the 2012–2013 and 2013–2014 percentages is statistically significant at the .05 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2012, 2013, and 2014.

DISCUSSION

Overall, serious thoughts of suicide among young adults remained unchanged in 49 states and the District of Columbia and increased in one state—New Hampshire. With state-level rates of serious thoughts of suicide among young adults reaching as high as 1 in 10, despite the absence of increases, suicide remains a public health issue that transcends geographical boundaries. Behind the statistics on completed suicides are the troubling large numbers of Americans who think seriously about committing suicide every year and do not receive mental health treatment.[3,4,5,11] Preventing suicide and addressing the behavioral health care needs of people at risk for suicidal behavior require public health information-sharing that raises awareness and identifies effective preventive interventions. Highlighting the prevalence of suicidal thoughts across states may help federal, state, and local policymakers continue to plan for and allocate resources to reduce the negative perceptions associated with mental and emotional issues, seek suicide prevention support, and increase access to mental health treatment.

It is critical to provide interventions for people with serious thoughts of suicide. The Substance Abuse and Mental Health Services Administration provides suicide prevention resources (http://www.samhsa.gov/prevention/suicide.aspx) and a toll-free suicide prevention hotline with free and confidential crisis counseling (http://www.suicidepreventionlifeline.org).

OTHER AVAILABLE NSDUH STATE MEASURES

The combined 2013–2014 NSDUH state estimates of past year serious thoughts of suicide and 24 additional behavioral health measures are available online at www.samhsa.gov/data/. The 24 additional measures are substance use and mental health outcomes, including initiation and use of illicit drugs (e.g., marijuana, cocaine, nonmedical use of prescription pain relievers), alcohol and tobacco use, perceived great risk of harm associated with alcohol and cigarette use, substance use disorders, needing but not receiving treatment for a substance use issue, serious mental illness, any mental illness, and depression. Maps for all outcomes and tables including percentages and counts for each state and census region and the nation by age group, as well as the methodology that generated the state estimates, are provided.

ENDNOTES

1. Kochanek, K. D., Murphy, S. L., Xu, J., & Arias, E. (2014, December). *Mortality in the United States, 2013* (NCHS Data Brief 178). Retrieved from http://www.cdc.gov/nchs/data/databriefs/db178.htm
2. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control [Producer]. (2015, March). *Web-based Inquiry Statistics Query and Reporting System (WISQARS™): 10 leading causes of death by age group, United States—2013*. Retrieved from http://www.cdc.gov/injury/wisqars/leadingcauses.html
3. National Center for Injury Prevention and Control. (2012). *Suicide: Facts at a glance*. Retrieved from http://www.cdc.gov/violenceprevention/pdf/Suicide-DataSheet-a.pdf
4. Mościcki, E. K. (2001). Epidemiology of completed and attempted suicide: Toward a framework for prevention. *Clinical Neuroscience Research, 1*, 310–323.
5. This estimate is based on a 3.2 percent rate (95 percent confidence interval=2.9 to 3.5 percent) as reported in Han, B., Kott, P. S., Hughes, A., McKeon, R., Blanco, C., & Compton, W. M. (2016). Estimating the rates of deaths by suicide among adults who attempt suicide in the United States. *Journal of Psychiatric Research, 77*, 125–133. doi:10.1016/j.jpsychires.2016.03.002
6. Center for Behavioral Health Statistics and Quality. (2015). *Suicidal thoughts and behavior among adults: Results from the 2014 National Survey on Drug Use and Health*. Retrieved from http://www.samhsa.gov/data/
7. SAE is a model-based methodology that provides more precise estimates of substance use at the state level than those based solely on the sample, particularly for smaller states. The precision of the SAE estimates, particularly for states with smaller sample sizes, can be improved significantly by combining data across 2 years (i.e., 2012 and 2013, 2013 and 2014).
8. The difference in sample sizes for each of the states between 2012–2013 and 2013–2014 is due to a sample redesign in 2014. For additional information, go to http://www.samhsa.gov/data/.
9. In this report, state estimates are discussed in terms of their observed rankings because they provide useful context. However, a state having a highest or lowest estimate does not imply that the state's estimate is significantly higher or lower than the estimate of the next highest or lowest state. Similarly, the quintiles were not selected to represent statistical differences across quintiles or to correspond to proximity to a target public health threshold for a particular measure. For example, the division of states into quintiles does not indicate that states in the same quintile are statistically similar to each other. Although a nearly equal number of states are contained in each quintile, the size of the intervals (i.e., the difference between the upper and lower limits of each quintile) that define the map boundaries is not necessarily uniform across each quintile. When comparing two state prevalence estimates, the method of overlapping confidence intervals is more conservative (i.e., it rejects the null hypothesis of no difference less often) than the standard method based on Z statistics when the null hypothesis is true. Even if confidence intervals for two states overlap, the two estimates may be declared significantly different by the test based on Z statistics. Hence, the method of overlapping confidence intervals is not recommended to test the difference of two state estimates. A detailed description of the method of overlapping confidence intervals and its comparison with the standard methods for testing of a hypothesis is given in the following articles: (a) Schenker, N., & Gentleman, J. F. (2001). On judging the significance of differences by examining the overlap between confidence intervals. *American Statistician, 55*(3), 182–186. (b) Payton, M. E., Greenstone, M. H., & Schenker, N. (2003). Overlapping confidence intervals or standard error intervals: What do they mean in terms of statistical significance? *Journal of Insect Science, 3*, 34.
10. The West has 13 states: AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, and WY. The South has 16 states plus the District of Columbia: AL, AR, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, and WV. The Northeast has 9 states: CT, MA, ME, NH, NJ, NY, PA, RI, and VT. The Midwest has 12 states: IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD, and WI.
11. Han B, Compton WM, Eisenberg D, Milazzo-Sayre L, McKeon R, Hughes A. Prevalence and mental health treatment of suicidal ideation and behavior among college students aged 18-25 and their non-college-attending peers in the United States. *Journal of Clinical Psychiatry*, DOI: 10.4088/JCP.15m09929.

SUGGESTED CITATION

Lipari, R.N., Hughes, A. and Williams, M. *State estimates of past year serious thoughts of suicide among young adults: 2013 and 2014.* The CBHSQ Report: - June 16, 2016. Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Rockville, MD.

SUMMARY

Background: Young adults aged 18 to 25 are at high risk of serious thoughts of suicide and behavior than many other age groups. Because states have been at the center of efforts to reduce suicide for all age groups, including young adults, it is useful to monitor changes in suicide ideation at the state level among this age group. **Method**: Combined 2013-2014 National Surveys on Drug Use and Health (NSDUH) were analyzed to estimate annual averages of past year serious thoughts of suicide among young adults aged 18 to 25 by state. Moreover, to examine changes by state over time, annual averages based on the 2012-2013 NSDUH were compared with those in 2013-2014. **Results**: Based on combined 2013–2014 NSDUH data, 2.6 million young adults aged 18 to 25 in the United States had serious thoughts of suicide in the past year. Findings in this report suggest that rates of serious thoughts of suicide have remained largely stable in recent years. The prevalence of past year serious thoughts of suicide remained unchanged in 49 states and the District of Columbia; however, the prevalence increased in New Hampshire. **Conclusion**: Highlighting the prevalence of serious thoughts of suicide among young adults in each state, as well as monitoring changes, may help policymakers continue to raise awareness about suicide prevention efforts.

Keywords: suicide, National Survey on Drug Use and Health, NSDUH

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KEYWORDS

Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Short Report, Population Data, 2013, 2014, Researchers, Young Adults as Audience, Suicide, Young Adults as Population Group, All US States Only

The Substance Abuse and Mental Health Services Administration (SAMHSA) is the agency within the U.S. Department of Health and Human Services that leads public health efforts to advance the behavioral health of the nation. SAMHSA's mission is to reduce the impact of substance abuse and mental illness on America's communities.

The National Survey on Drug Use and Health (NSDUH) is an annual survey sponsored by SAMHSA. The data used in this report are based on information obtained from young adults aged 18 to 25 (39,000 in 2013–2014 and 45,200 in 2012–2013). NSDUH collects data by administering questionnaires to a representative sample of the population through face-to-face interviews at their place of residence.

The CBHSQ Report is prepared by the Center for Behavioral Health Statistics and Quality (CBHSQ), SAMHSA, and by RTI International in Research Triangle Park, North Carolina. (RTI International is a registered trademark and a trade name of Research Triangle Institute.)

Information on the most recent NSDUH is available in the following publication:

Center for Behavioral Health Statistics and Quality. (2015). *Behavioral health trends in the United States: Results from the National Survey on Drug Use and Health* (HHS Publication No. SMA 15-4927, NSDUH Series H-50). Retrieved from http://www.samhsa.gov/data/

Also available online: http://www.samhsa.gov/data/population-data-nsduh.

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