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America’s Health Rankings®
Health of Those Who Have Served Report

Introduction

Men and women who serve in the United States Armed Forces play essential roles in maintaining the safety and security of our country. Nearly 22 million Americans living today have served on active duty in the U.S. Armed Forces — 2.6 million of whom are currently on active duty or in the National Guard and Military Reserves, and more than 19.5 million of whom are retired.1,2 Those who have served continue to face unique health challenges and needs.

Our nation looks to men and women in uniform to serve and protect, and it is our duty to respond to and support their overall health and health care needs. To do so, we must work toward a clearer understanding of their health circumstances and prioritize developing solutions that address the challenges they face. Since 2016, the America’s Health Rankings Health of Those Who Have Served Report has provided a national portrait of the health and well-being of those who have served in the U.S. Armed Forces. In 2017, the Health of Women Who Have Served Report focused specifically on challenges among females who have served.

The United Health Foundation, in partnership with the Military Officers Association of America (MOAA), is pleased to update the Health of Those Who Have Served Report this year to highlight new trends and findings about the similarities and differences in health between those who have served and their civilian counterparts, as well as within groups of those who have served. Through ongoing collaboration with an advisory steering group of leading military, veterans and public health organizations, this important work builds on United Health Foundation’s ongoing commitment to leverage data to improve the health of men and women who have served.

Shifting Demographics

As we seek to better understand the current population of those who have served, it is important to also look ahead at how shifting demographics may change health needs for these individuals. The U.S. Department of Veterans Affairs projects the size of the veteran population will decrease by approximately 30% to 13.6 million by 2048.2 Racial and ethnic diversity among veterans will also rise, and people of color will account for nearly one-third (35.3%) of the total veteran population by 2040.3 In addition, women are also becoming an increasingly larger proportion of the veteran population.1

The changing face of this population creates unique health challenges and places new demands on both the health care system and individual communities. Although many service members return from active duty and combat without physical injuries and receive education, employment and other benefits associated with service, some face serious and lasting health effects.

Evolving Health Needs

As this population ages, the burden of chronic disease will continue to grow, especially among those who served in the Vietnam and Korean Wars. Women who have served also face unique health challenges. Despite higher education levels and higher incomes, women with military service have a greater prevalence of physical and mental health concerns than civilian women.3 Those returning from overseas deployments in more recent years face unique combat-related circumstances and challenges as well.4 As a volunteer force and the largest, longest lasting mobilization of National Guard and Military...
Reserves, these service members face more frequent and longer deployments as well as exposure to and survival from extreme stresses of combat.¹ Data show these individuals may experience behavioral and mental health challenges.¹ These changes and circumstances have contributed to unprecedented rates of behavioral and mental health concerns, such as post traumatic stress disorder (PTSD) and traumatic brain injury (TBI).¹

These changing dynamics emphasize the continued need for policymakers, public health officials and community leaders to monitor the health of those who have served through a wide lens, including measures of behaviors and social determinants that influence health.

**Report Objectives**

The *America’s Health Rankings® 2020 Health of Those Who Have Served Report* provides a comprehensive national portrait and examines trends of the health and well-being of those who have ever served on active duty in the U.S. Armed Forces. It remains the only national resource to provide comprehensive population-based data and trends over time on the health of men and women who have served. The report fills an important and ongoing gap in the field and is intended for a broad range of audiences including advocates, policymakers, government officials and constituents at the national, state and local levels. The report’s objectives are to:

- **Describe the health of those who have served** across 29 measures of social and economic factors, behaviors, clinical care and health outcomes. Comparisons between those who have and have not served are examined overall and by age, gender, race/ethnicity, education and income.

## Introduction

This report is the fourth update in *America’s Health Rankings*’ reports on the health of those who have served. See [www.AmericasHealthRankings.org](http://www.AmericasHealthRankings.org) to dig deeper into the new data.

The objective of this report is to document and offer insight into the distinct and changing health profile of those who have served.

- **Provide trends on health and well-being improvements and challenges over time** for those who have served overall and in comparison to those who have not served by age, gender, race/ethnicity, education and income.

- **Build awareness of the breadth and magnitude of health concerns** facing those who have served overall and for specific population groups.

- **Stimulate dialogue and action** to inform health priorities and improve the health of those who have served, recognizing the military community is an evolving segment of the U.S. population facing distinct needs.
Design

Overview
The 2020 Health of Those Who Have Served Report was developed with guidance from a National Advisory Group representing military, veteran, and public health organizations who informed the selection of health measures and other methodological features of the report. For more information on the group, see page 21.

As in previous editions, the primary source of data for this report is the Centers for Disease Control and Prevention’s (CDC) Behavioral Risk Factor Surveillance System (BRFSS), the world’s largest, annual population-based telephone survey system tracking health conditions and risk behaviors in America since 1984. With an annual sample of over 400,000 respondents, BRFSS also has one of the most robust samples of those who have served, totaling nearly 60,000 each year.

This report also draws on data from the Substance Abuse and Mental Health Services Administration’s National Survey on Drug Use and Health (NSDUH) and the CDC’s National Health Interview Survey (NHIS). NSDUH provides national and state data on the use of tobacco, alcohol, illicit drugs, and mental health in the U.S. and includes an annual sample of about 2,500 individuals who have served. NHIS is the nation’s largest in-person household health survey conducted since 1957 and includes an annual sample of nearly 7,000 individuals who have served.

Definition of Those Who Have Served
Those who have served are defined in this report as “those who have ever served in the U.S. Armed Forces.” While all three data sources use this common definition, some differences exist in who is included among those with service. For more information on specific definitions used by BRFSS, NSDUH, and NHIS, see page 19.

Measures
The 2020 Health of Those Who Have Served Report is based on 29 measures. Informed by the latest literature and guidance from the National Advisory Group, the selection of these measures was driven by three criteria:

• Measures must represent overall health conditions, behaviors, and care issues most pertinent to those who have served in the U.S. Armed Forces, including those addressing mental illness and chronic disease.

• Individual measures must have sufficient sample sizes to assure reliable estimates for those who have served and not served overall, and where possible, by age, gender, race/ethnicity, education and income.

• Each selected measure must be amenable to change. In other words, each measure can be modified by policy or intervention to achieve measurable improvement.

Data and Analysis
This report utilizes eight years of data, 2011-2018, drawn from BRFSS, NSDUH, and NHIS. Data were weighted and age-adjusted into two-year periods as follows:

• Baseline reporting period, 2011-2012: provides a baseline by which to compare trends across editions, and over time.

• Prior reporting period, 2015-2016: these rates were presented as the “current” rate in the 2018 Edition, and now represent the most recent interim period in the trends analysis.
Key Findings

Overview
Since 2016, America’s Health Rankings has examined important differences in the health of those who have served in the U.S. military compared with those who have not. The Health of Those Who Have Served Report continues to identify profound differences between those who have and have not served across health behaviors, social and economic factors, clinical care and health outcomes. This year, the report finds:

• Those who have served continue to report a more positive outlook on their health, compared with those who have not served. However, for the first time, the percentage reporting very good or excellent health has declined.

• Those who have served continue to report higher rates of chronic disease than their civilian counterparts.

• Rates of mental health challenges, such as depression and frequent mental distress, are increasing at a faster rate among those who have served than those who have not.

• Rates of mental health challenges differ among men and women who have served.

• The percentage of those who have served who received a flu vaccination has decreased.

• Those who have served report lower rates of avoiding care due to cost.

Age Adjustment
Those who have served on active duty have a different age distribution from the general U.S. population. To prevent age from skewing results, data included in this report were age-adjusted to the 2000 U.S. Standard Population. This adjustment produces fairer, more realistic comparisons between those who have and have not served. Age-adjusted prevalence estimates should be understood as relative estimates, not as actual measures of burden. For additional information, see page 19.
Those who have served consistently report a more positive outlook on health than those who have not served.

Self-reported health status is a measure of how individuals perceive their health and is used as an indicator of a population’s health. It is a subjective measure of health-related quality of life and is not limited to certain health conditions or outcomes but instead is influenced by life experiences, the health of others in a person’s life, support from family and friends as well as other factors affecting well-being. Since the baseline reporting period (2011-2012), those who have served have had a higher prevalence of reporting that they have high health status. This year’s report finds 54.6% of those who have served indicate their health is very good or excellent, compared with 50.0% among those who have not served.

The difference in high health status between those who have and have not served is particularly pronounced among certain subpopulation groups. The prevalence of high health status is higher among Hispanic, Black, American Indian/Alaska Native and Hawaiian/Pacific Islander adults who have served compared with those who have not served. High health status is 1.5 times higher among Hispanics who have served than Hispanics who have not served.

In addition, among those ages 18-49, those who have served also have a significantly higher prevalence of reporting high health status than those who have not served. Among those ages 18-25 years old, those who have served report 1.3 times higher prevalence of high health status.

**Key Findings**

**High Health Status**

**Those who self-reported health status as very good or excellent.**

<table>
<thead>
<tr>
<th></th>
<th>Served (%)</th>
<th>Not Served (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>54.6%</td>
<td></td>
<td>50.0%</td>
</tr>
</tbody>
</table>

Hispanics who have served.

**Disparities in the Prevalence of High Health Status**

- 51.1% vs. 34.4% higher among Hispanics who have served.
- 75.7% vs. 59.2% higher among those ages 18-25 who have served.
than those in this age group who have not served. This difference was not seen among those ages 50 and older.

Among those who have served, the prevalence of high health status is higher among those with higher incomes, with a college degree and those ages 18-25.

For the first time the percentage reporting high health status has declined among both those who have and have not served.

Since the prior reporting period (2015–2016), the percentage reporting high health status declined 3% (from 56.3% to 54.6%) among those who have served and 2% (from 51.1% to 50.0%) among those who have not served. Among those who have served, the prevalence of high health status among males decreased 4% and decreased 7% among those ages 35-49 over the same period. Going forward, it will be important to examine whether these trends continue and what a decline in subjective measures of health may indicate for the health of those who have served, as well as the broader population.
Despite reporting high health status, those who have served consistently report higher rates of chronic disease than their civilian counterparts.

Chronic diseases often require long-term management and contribute to many of the leading causes of death. Since the baseline reporting period (2011–2012), those who have served have reported higher rates of several chronic diseases than those who have not served, including arthritis, cancer, cardiovascular disease, chronic obstructive pulmonary disease, and pain.

Visit [www.AmericasHealthRankings.org](http://www.AmericasHealthRankings.org) to learn more about rates of chronic disease among those who have served.
Among adults ages 50 and older, those who have served have higher rates of chronic disease than those who have not served. For example, those who have served have a 1.5 times higher rate of cardiovascular disease (21.5% vs. 14.8%), 1.2 times higher rate of cancer (24.7% vs. 21.1%) and 1.2 times higher rate of COPD (12.4% vs. 10.6%).

Asian Americans who have served have higher rates of many chronic conditions compared with their civilian counterparts, including a 2.5 times higher prevalence of pain (23.0% vs. 9.3%), 2.2 times higher rate of cardiovascular disease (9.0% vs. 4.1%) and 1.5 times higher rate of arthritis (18.2% vs. 12.4%).

Among those who have served, females report higher rates of COPD, arthritis, cancer and pain compared with males. In contrast, males who have served report higher rates of cardiovascular disease than females who have served.

### Key Findings

**Chronic Disease Disparities Among Asian Americans**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Served (%)</th>
<th>Not Served (%)</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>23.0%</td>
<td>9.3%</td>
<td>2.5x</td>
</tr>
<tr>
<td>Cardiovascular Disease</td>
<td>9.0%</td>
<td>4.1%</td>
<td>2.2x</td>
</tr>
<tr>
<td>Arthritis</td>
<td>18.2%</td>
<td>12.4%</td>
<td>1.5x</td>
</tr>
</tbody>
</table>

**Obesity continues to increase.**

Obesity rates remain similar between those who have and have not served. Since the baseline reporting period (2011–2012), obesity prevalence has increased 12% among those who have served (from 27.6% to 30.9%) and 11% among those who have not served (from 27.3% to 30.2%). Obesity is one of the leading causes of preventable life-years lost among Americans. Weight stigma, or discrimination and stereotyping based on an individual’s weight, may also negatively influence psychological and physical health.
Mental Health

Overall, those who have served report a similar prevalence of mental health concerns as those who have not served.

A healthy mental state is essential to health and well-being. Poor mental health is a leading cause of disability in the United States and affects an individual’s ability to contribute to community and society. Mental illnesses range in severity, from mild, occasional symptoms to debilitating impairments that can lead to persistent disability and premature death from chronic disease or suicide. Certain experiences associated with military service may predispose people who have served to developing mental illness.

Those who have served reported prevalences of depression (18.5% served vs 18.7% not served), frequent mental distress (12.8% served vs. 12.7% not served), suicidal thoughts (5.4% served vs. 4.4% not served) and any mental illness (19.8% served vs. 19.6% not served) that are similar to individuals who have not served.

Frequent mental distress refers to having had 14 or more mentally unhealthy days in the past 30 days. Having adequate social and emotional support may reduce the chance of those who have served experiencing frequent mental distress.

When someone experiences mental illness, seeking treatment is important. Nearly half of those who have served who experienced mental illness reported receiving mental health treatment (46.9%). This is similar to rates among those who have not served (43.3%). Negative beliefs and stigma surrounding mental health treatment may contribute to avoiding mental health care.

Mental Health

Nearly half of those who have served who experienced mental illness reported receiving mental health treatment.

46.9%
However, differences emerge when examining mental health concerns by gender.

Males and females who have served report higher prevalence of depression, frequent mental distress and any mental illness than males and females who have not served.

- Depression is 1.3 times higher among males and 1.2 times higher among females who have served, compared with their civilian counterparts.
- Frequent mental distress is 1.2 times higher among males and 1.1 times higher among females who have served, compared with males and females who have not served.
- Any mental illness is 1.2 times higher among males and 1.3 times higher among females who have served, compared to male and female civilians.

In addition, the prevalence of suicidal thoughts among males who have served is 1.3 times higher than among males who have not served (5.3% vs. 4.0%). Males with service also have a 1.4 times higher rate of mental health treatment than males who have not served (45.2% vs. 32.8%). It is also important to highlight that among those who have served, males and females report different prevalences of mental health concerns. Compared to males who have served, females who have served report higher rates of any mental illness, depression and frequent mental distress.

### Mental Health

#### Suicidal thoughts are 1.3x higher among males who have served than those who have not served.

5.3% of those who have served vs. 4.0% of civilians

#### Males Who Have Served

- Higher rates of any mental illness.
  - 30.5% of females who have served vs. 18.0% of males who have served

#### Females Who Have Served

- Higher rates of depression.
  - 27.7% of females who have served vs. 16.8% of males who have served

- Higher rates of frequent mental distress.
  - 16.4% of females who have served vs. 12.0% of males who have served
Since the baseline reporting period, those who have served experienced more than twice the rate of increase in frequent mental distress and depression than those who have not served.

The prevalence of frequent mental distress has increased 13% (from 11.3% to 12.8%) among those who have served since the baseline reporting period (2011–2012), while the prevalence among those who have not served increased 5%.

The prevalence of depression increased 23% (from 15.0% to 18.5%) among those who have served during this same time period, while the prevalence among those who have not served increased 11%. Depression symptoms can impact all aspects of life, including how people think, feel and handle daily activities.

Visit www.AmericasHealthRankings.org to learn more about mental health among those who have served.
Additional Findings

Flu vaccinations have declined among those who have served.

A flu vaccine is the best protection against seasonal influenza viruses. Veterans tend to be older and have higher rates of comorbidities compared with the general population which can place them at a greater risk of flu and flu complications. The percentage of flu vaccinations is 1.3 times higher in those who have served (43.8%) than those who have not (34.3%).

However, since the prior reporting period (2015–2016), the prevalence of flu vaccinations among those who have served decreased 13% (from 50.6% to 43.8%). Among those who have not served, the percentage of flu vaccinations decreased 7% since the prior report. This decline is concerning, because during military service, an annual flu vaccination is required and the importance of such vaccinations is stressed. If those who have served no longer receive beneficial vaccinations after separation from service, education surrounding vaccination may need to be improved.

Flu Vaccinations

Since the prior report, prevalence of flu vaccinations decreased among those who have served.

13%

from 50.6% to 43.8%

Served

Those who have served report higher rates of health insurance and lower rates of avoiding health care due to cost.

Compared with those who have not served, those who have served report higher rates of health insurance (92.5% vs. 86.6%) and lower rates of avoiding care due to cost (9.0% vs. 14.2%) than those who have not served. However, among those who have served, 21.1% of those with incomes less than $25,000 have avoided care due to cost, compared with 4.3% among those with incomes of at least $75,000. The high cost of health care in the United States is one of the leading factors in avoiding care. Cost concerns may lead people to forego screenings and treatment for minor problems that can worsen into serious disease.

Conclusions

The America’s Health Rankings 2020 Health of Those Who Have Served Report continues to shed light on the distinct health concerns facing men and women who have served in the U.S. Armed Forces. The findings of this report not only reaffirm the distinct health and broader needs of those who have served, but also highlight encouraging improvements, persistent challenges, as well as new and emerging concerns overall and for specific subpopulations of those who have served. The report offers important insights and direction to inform future areas of research, dialogue, advocacy and policy that improve the health and well-being of all those who have bravely and selflessly sacrificed and served this country.
Appendix

Data were obtained from the Centers for Disease Control and Prevention’s Behavioral Risk Factor Surveillance System (BRFSS) and National Health Interview Survey (NHIS), and the Substance Abuse and Mental Health Services Administration’s National Survey on Drug Use and Health (NSDUH). Unless otherwise indicated, data are from 2017-2018.

### Table 1

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive Drinking</td>
<td>Percentage of adults who reported either binge drinking (four or more [women] or five or more [men] alcoholic beverages on a single occasion in the past 30 days) or chronic drinking (eight or more [women] or 15 or more [men] alcoholic beverages per week)</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Insufficient Sleep</td>
<td>Percentage of adults who reported sleeping, on average, fewer than seven hours in a 24-hour period</td>
<td>BRFSS (2018)</td>
</tr>
<tr>
<td>Physical Inactivity</td>
<td>Percentage of adults who reported doing no physical activity or exercise other than their regular job in the past 30 days</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Smoking</td>
<td>Percentage of adults who reported smoking at least 100 cigarettes in their lifetime and currently smoke daily or some days</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Smokeless Tobacco Use</td>
<td>Percentage of adults who use chewing tobacco, snuff or snus every day or some days</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Opioid Misuse</td>
<td>Percentage of adults who either used heroin or misused prescription pain relievers in the past year. Misuse of prescription pain relievers is defined as use in any way not directed by a doctor in the past year (including use without a prescription, use in greater amounts, more often, or longer than told to take a drug, or use in any other way not directed by a doctor)</td>
<td>NSDUH</td>
</tr>
</tbody>
</table>
### Social & Economic Factors

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoided Care due to Cost</td>
<td>Percentage of adults who reported a time in the past 12 months when they needed to visit a doctor but could not because of cost</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Health Insurance</td>
<td>Percentage of adults who have health insurance privately, through their employer or through the government</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Employment</td>
<td>Percentage of adults who are in the workforce and are either employed for wages or self-employed</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Food Insecurity</td>
<td>Percentage of adults who reported not having sufficient money to eat when and what they should, or being concerned that food would run out before they have money to buy more in the past 30 days</td>
<td>NHIS</td>
</tr>
</tbody>
</table>

### Clinical Care

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorectal Cancer Screening</td>
<td>Percentage of adults ages 50-75 who reported receiving one or more of the recommended colorectal cancer screening tests within the recommended time interval</td>
<td>BRFSS  (2018)</td>
</tr>
<tr>
<td>Dedicated Health Care Provider</td>
<td>Percentage of adults who reported having one or more people they think of as their personal doctor or health care provider</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Dental Visit</td>
<td>Percentage of adults who reported visiting the dentist or dental clinic within the past year for any reason</td>
<td>BRFSS  (2018)</td>
</tr>
<tr>
<td>Flu Vaccination</td>
<td>Percentage of adults who reported receiving a flu vaccine in the past 12 months</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Mental Health Treatment</td>
<td>Percentage of adults experiencing mental illness in the past year who reported receiving any mental health treatment in the past 12 months, including inpatient care (such as hospital or residential treatment), outpatient care (such as therapy from a clinician [e.g., doctor, psychologist, counselor, social worker], outpatient clinic, partial-day hospital stay, or day treatment program) or taking any prescription medications prescribed to treat a mental or emotional condition. Treatment for alcohol or drug use is not included.</td>
<td>NSDUH</td>
</tr>
<tr>
<td>Measure</td>
<td>Description</td>
<td>Source</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Any Mental Illness</td>
<td>Percentage of adults who reported having serious, moderate or mild mental illness in the past year</td>
<td>NSDUH</td>
</tr>
<tr>
<td>Arthritis</td>
<td>Percentage of adults who reported being told by a health professional that they have some form of arthritis</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Cancer</td>
<td>Percentage of adults who reported being told by a health professional that they had any form of cancer, skin or otherwise</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Cardiovascular Disease</td>
<td>Percentage of adults who reported being told by a health professional that they had angina or coronary heart disease; a heart attack or myocardial infarction; or a stroke</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Chronic Obstructive Pulmonary Disease</td>
<td>Percentage of adults who reported being told by a health professional that they have Chronic Obstructive Pulmonary Disease (COPD)</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Depression</td>
<td>Percentage of adults who reported being told by a health professional that they have a depressive disorder including depression, major depression, minor depression or dysthymia</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Diabetes</td>
<td>Percentage of adults who reported being told by a health professional that they have diabetes (excluding pre-diabetes and gestational diabetes)</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Frequent Mental Distress</td>
<td>Percentage of adults who reported their mental health was not good 14 or more days in the past 30 days</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Frequent Physical Distress</td>
<td>Percentage of adults who reported their physical health was not good 14 or more days in the past 30 days</td>
<td>BRFSS</td>
</tr>
<tr>
<td>High Health Status</td>
<td>Percentage of adults who reported that their health is very good or excellent</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Obesity</td>
<td>Percentage of adults with a body mass index of 30.0 or higher based on reported weight and height</td>
<td>BRFSS</td>
</tr>
<tr>
<td>Pain</td>
<td>Percentage of adults who reported having pain most days or every day in the past three months</td>
<td>NHIS (2018)</td>
</tr>
<tr>
<td>Suicidal Thoughts</td>
<td>Percentage of adults who reported seriously thinking about killing themselves in the past year</td>
<td>NSDUH</td>
</tr>
<tr>
<td>Teeth Extractions</td>
<td>Percentage of adults who reported having six or more permanent teeth extracted due to tooth decay or gum disease</td>
<td>BRFSS (2018)</td>
</tr>
</tbody>
</table>
Appendix

Methodology

Data in this report are obtained from the Centers for Disease Control and Prevention’s Behavioral Risk Factor Surveillance System (BRFSS) and National Health Interview Survey (NHIS), and the Substance Abuse and Mental Health Services Administration’s National Survey on Drug Use and Health (NSDUH).

Data are from 2011-2018. To ensure adequate sample size for the number of people who have served, two years of data were combined into four reporting periods: 2011-2012, 2013-2014, 2015-2016 and 2017-2018. Baseline refers to the first set of data years (2011-2012). Prior refers to the last edition published before the current release, which used 2015-2016 data. Current refers to this year’s report, which uses the most recent data available, 2017-2018.

Sample Sizes of Those Who Have Served by Source and Reporting Period

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>BRFSS</td>
<td>123,186</td>
<td>120,492</td>
<td>112,909</td>
</tr>
<tr>
<td>NSDUH</td>
<td>4,533</td>
<td>5,270</td>
<td>5,119</td>
</tr>
<tr>
<td>NHIS</td>
<td>14,236</td>
<td>14,281</td>
<td>10,741</td>
</tr>
</tbody>
</table>

Subpopulation categories were reported consistently across all data sources where possible, though in some instances, categories were not comparable across surveys. Age categories for all indicators were reported in accordance with NSDUH age ranges, as NSDUH reports respondent ages only by category and not as a discrete value. NHIS does not report a Hawaiian/Pacific Islander race/ethnic group. Cutoff points for the lowest household income category also differed across surveys. For purposes of general alignment, the following categories were selected for the lowest annual household income cutoff in each survey: $25,000 per year for BRFSS; $30,000 per year for NSDUH; and $35,000 per year for NHIS.

Data were suppressed according to the guidance provided by each data source. For BRFSS and NHIS, weighted prevalence estimates were suppressed if the relative standard error was greater than 30% or if the unweighted sample size was less than 50. For NSDUH, weighted prevalence estimates were suppressed if the estimated prevalence rate was less than 0.00005, greater than 0.999995, or if the unweighted sample size was less than 100. Additionally, data were suppressed if the relative standard error was greater than 0.175 (according to suggested NSDUH methodology) and/or if the effective sample size was less than 68.

Limitations

Given the large annual sample sizes in the analyzed datasets and the pooling of multiple years of data to produce estimates, the numbers presented on those who have served are backed by adequate statistical power. Further,
the sampling designs of these surveys ensure representation by multiple demographic variables.

However, there are limitations to interpreting data on those who have served. For example, each of the three sources of data analyzed for this report asks different questions about military service. Since 2011, BRFSS has asked only whether the respondent has served on active duty in the U.S. Armed Forces. By comparison, NSDUH asks whether respondents have ever been in the U.S. Armed Forces and excludes any who are currently on active duty. NHIS asks if the respondent has ever served in the U.S. Armed Forces, Military Reserves, or National Guard and excludes those on active duty. As such, BRFSS data in this report do not distinguish between those currently serving and those who have been discharged, while NSDUH and NHIS data exclude those on active duty but include those who currently or in the past have served in the Military Reserves or National Guard without being activated. For the time period analyzed, none of the surveys allows analysis by the nature of discharges, involvement in active combat, or the era in which one served. Thus, changes over time could be influenced by cohort effects and may confound the interpretation of age-specific results and comparisons.

Additionally, samples of those who have served and not served may be different from one another in demographic composition, for example citizenship status. Such differences may contribute to observed differences in results between the groups. Caution should also be taken when interpreting data on specific health measures. Of note, many health outcome measures indicate whether respondents have been told by a health care professional that they have a disease, excluding those who may not have received a diagnosis or not have sought or obtained treatment.
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