

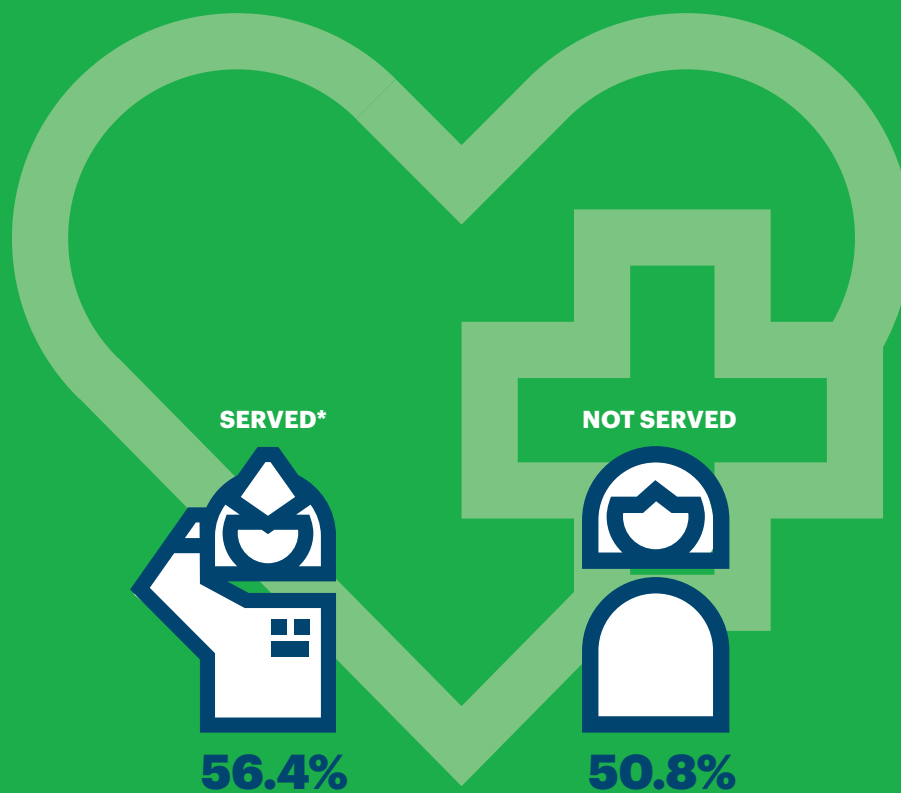
**HEALTH OF
Women
Who Have
Served
REPORT**

2017



America's Health Rankings® and America's Health Rankings® Health of Women Who Have Served Report are built upon the World Health Organization definition of health: "Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." Our model reflects that determinants of health—Behaviors, Clinical Care, Policy, and Community and Environment—directly influence health outcomes.

Women who have served are **more likely to report being in very good or excellent health than their civilian counterparts.**



* Statistically significant difference between served and not served.

Data from the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS).

America's Health Rankings® Health of Women Who Have Served Report

Executive Summary

Our nation is grateful for the service of all the men and women who have served, or continue to serve, in the United States (U.S.) Armed Forces. From enlistment through retirement, the health of these individuals continues to be a high priority for the public health community. United Health Foundation is committed to helping communities across the country understand the similarities and differences between the health of those who have served and those who have not served.

Today, in addition to the nearly 2 million female veterans, over 200,000 women serve on active duty.^{1,2} As more women join the military to serve their country, the percent of female veterans is expected to increase to 16.3 percent by 2043 from 9.4 percent today² — making it all the more urgent to better understand and monitor the unique health challenges experienced by this population.

This year, United Health Foundation, in partnership with the Military Officers Association of America (MOAA), takes a closer look at the health differences between women who have served and women who have not served (hereafter referred to as “civilians”) in releasing the *America's Health Rankings® Health of Women Who Have Served Report*. This distinctive study, developed in collaboration with an advisory group of leading military, veterans, and public health organizations, establishes a baseline portrait of the health of women who have served in

the U.S. Armed Forces compared to the health of civilians, with additional comparisons by age and race/ethnicity.

The report analyzes 23 health measures from three publicly-available data sources: 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). The measures included are indicators of behaviors, health outcomes, clinical care, community and environment, and policy.

The research builds on the *America's Health Rankings® Health of Those Who Have Served Report*, released in 2016. That report also examined how the health and health care experiences of both men and women who have served differ from their civilian counterparts across a wide range of key health indicators.

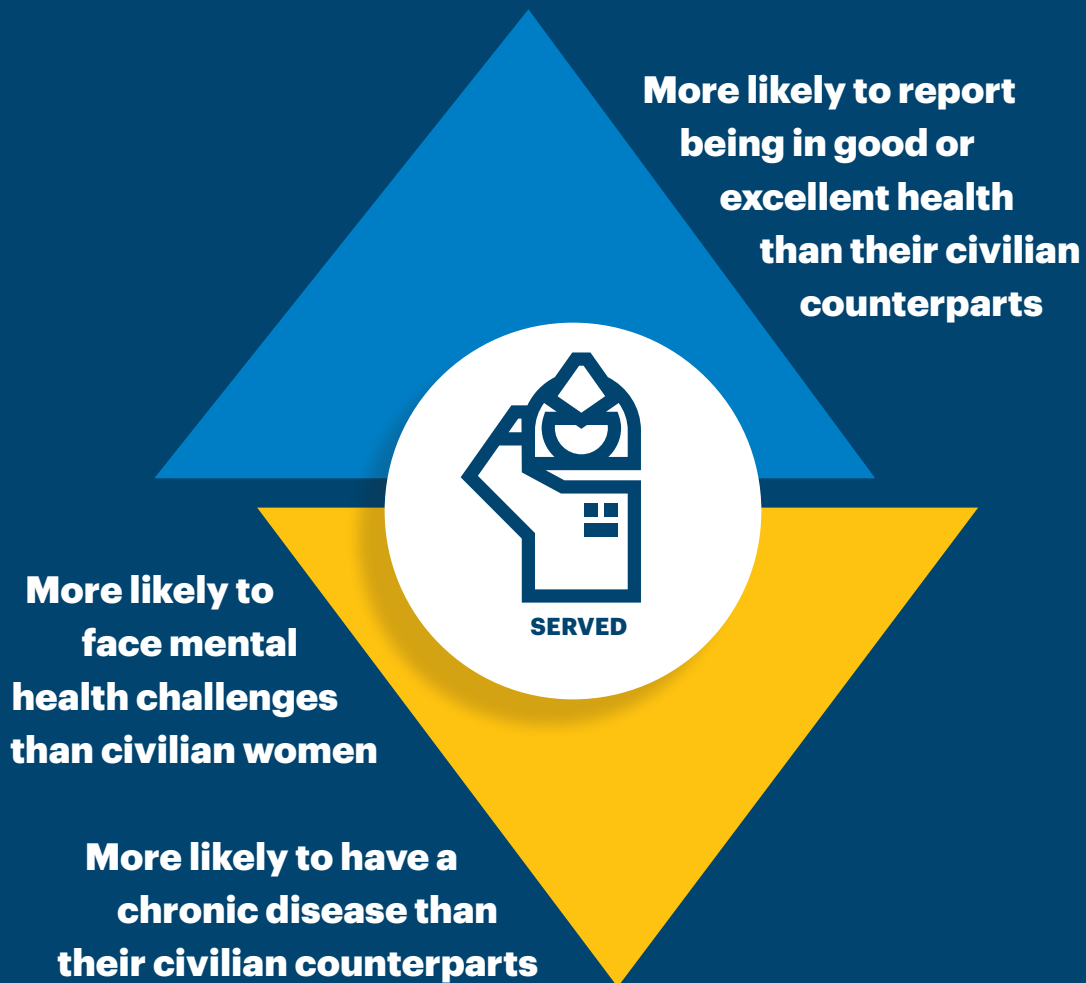
Women Who Have Served Report Better Health Than Civilian Women

When it comes to overall health, women who have served are more likely to report being in very good or excellent health than their civilian counterparts. Among women who have served, 56.4% report being in very good or excellent health, compared to slightly more than half of civilian women (50.8%).

Key differences in overall health are particularly pronounced among minority women. For example, blacks, Hispanics, Hawaiians/Pacific Islanders, and American Indians/Alaska Natives report significantly higher rates of high health status among women who have served than their civilian counterparts.

1. Department of Defense. 2015 Demographics: Profile of the Military Community. Available at: <http://download.militaryonesource.mil/12038/MOS/Reports/2015-Demographics-Report.pdf>.
2. Department of Veterans Affairs. Women Veterans Report: The Past, Present, and Future of Women Veterans. February 2017. Available at: https://www.va.gov/vetdata/docs/Special-Reports/Women_Veterans_2015_Final.pdf.

**Highlighting the distinct health experiences of
women who have served in the U.S. Armed Forces**



Data 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).

Executive Summary

Mental Health Challenges Present Concerns for Women Who Have Served

Despite reporting better overall health than their civilian counterparts, women who have served are more likely to face mental health challenges. In fact, women who have served are almost twice as likely to have had suicidal thoughts in the past year as civilian women. Further, women who have served are significantly more likely to have ever been diagnosed with depression than civilian women.

Additionally, more than 30% of women who have served have had a mental illness in the past year, compared to about 22% of civilian women.

Notably, the report finds large age-related differences in the rate of certain mental health conditions between women who have served and civilian women. For example, women aged 35 to 49 years who have served have significantly higher rates of having any mental illness in the past year (33.2% vs. 23.6%), and are more likely to report ever being told by a health professional that they have a depressive disorder (27.2% vs. 23.0%) than civilian women of similar age.

Despite reporting better overall health, women who have served are more likely to face mental health challenges than civilian women.

Suicidal Thoughts in the Past Year



Ever Diagnosed with Depression



Any Mental Illness in the Past Year

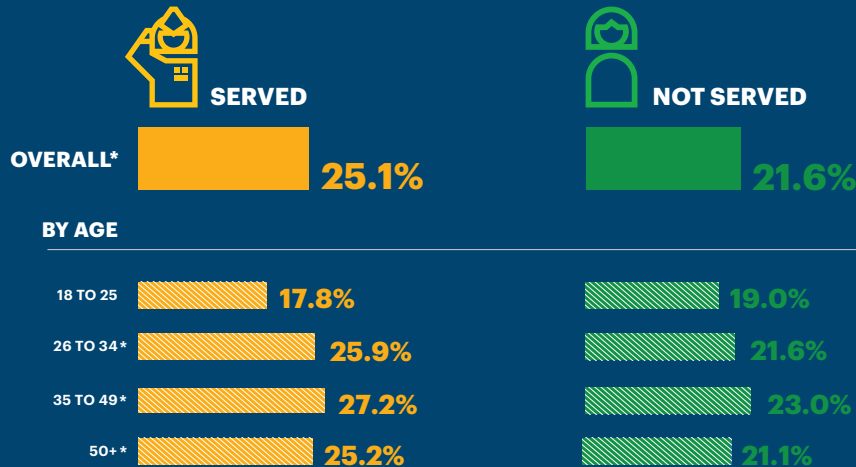


* Statistically significant difference between served and not served.

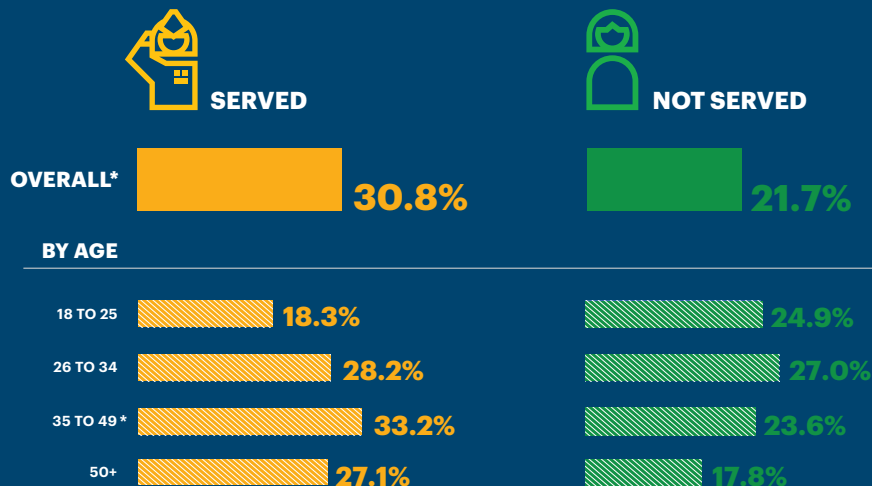
Data from the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS), and the Substance Abuse and Mental Health Services Administration's National Survey on Drug Use and Health (NSDUH).

Among both women who have served and their civilian peers, the rate of many mental health challenges varies with age.

Women who have served have a **16% higher rate of having ever been diagnosed with depression.**



Women who have served have a **42% higher rate of having a mental illness in the past year.**



* Statistically significant difference between served and not served.

Data from the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS), and the Substance Abuse and Mental Health Services Administration's National Survey on Drug Use and Health (NSDUH).

Executive Summary

Women Who Have Served Have Greater Access to Care, But Face Higher Rates of Chronic Diseases Than Civilian Women

The report also looks at how access to care differs between women who have served and civilian women. In general, women who have served tend to have greater access to care, including higher rates of health insurance and use of key cancer preventive screenings.

However, women who have served also experience higher rates of certain chronic diseases than their civilian counterparts, including higher rates of arthritis, cancer, cardiovascular disease, COPD, and functional impairment than civilian women. These findings are consistent with, and add dimension to, other studies showing that women veterans face both chronic physical and mental health challenges.

The *Health of Women Who Have Served Report* finds notable differences by race/ethnicity and age across these measures. The report finds that many groups of minority women who have served have significantly higher rates of insurance coverage compared to civilian women; further, women aged 26 to 34 years who have served report nearly twice the rate of arthritis than civilian women in this age group (15.3% vs. 8.6%).

Continuing Our Nation's Commitment to Support the Health of Women Who Have Served and Their Families

As the number of women serving our country grows, so too does the importance of understanding the contributors to their health and well-being. For policymakers, health officials, and community leaders, this report fills previously unaddressed gaps in better understanding the health of women who have served in the U.S. Armed Forces. It also offers deeper insights into how needs may differ based on race/ethnicity and age among women who have served. In releasing this report, United Health Foundation and MOAA seek to inform efforts for improving the health and health care experiences of women who have served.

Women who have served have a **a 16% higher rate of arthritis, cancer, and cardiovascular disease, a 19% higher rate of COPD, and a 29% higher rate of functional impairment** than those who have not served.

Women who have served **have higher rates of many chronic diseases** than their civilian counterparts.

ARTHRITIS



CANCER



CARDIOVASCULAR DISEASE



COPD



FUNCTIONAL IMPAIRMENT



* Statistically significant difference between served and not served.

Data 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).

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Introduction

Over 2.2 million women living today have served in the United States (U.S.) Armed Forces — approximately 2 million veterans¹ and another 200,000 currently on active duty.² Women are a rapidly growing segment of the U.S. military population, representing over 9% of veterans, 15% of active duty personnel, 19% of National Guard and Reserves, and 20% of new recruits.² Women are also one of the fastest growing groups of new users of health services provided by the U.S. Department of Veterans Affairs (VA).

Nearly 70 years have passed since women were first recognized as members of the U.S. Armed Forces. As roles for women in the military have expanded, more women have been able to enjoy the career, financial, and personal benefits of military service. In one study, three-quarters of women veterans reported their military service was useful in preparing them for a career, roughly 90% said the military helped their personal growth and self-confidence, and 97% felt proud to have served in the military.³ Hundreds of thousands of women are using veterans' educational benefits to pursue higher education or vocational training, and research shows women veterans tend to earn higher incomes than civilian women.^{4,5}

Women's experiences in the military and challenges of adjusting to life after the military differ from men in important ways. Despite decades of progress, some cultural and institutional elements of the military remain limiting for women.⁶ Women in the military

Despite being more highly educated and having higher incomes, women with military service face a greater burden of many health concerns than civilian women.

advance in rank more slowly than men and are underrepresented in high ranking positions.⁷ Nearly half of women who serve are mothers, and many must balance their military career with caring for children.⁴ Research documents prevalent housing instability and workforce transition challenges for women veterans.³ While the exact prevalence of military sexual trauma is unknown, research suggests that approximately one in three women who have served have experienced sexual harassment or assault during their service.⁸

Women who have served in the military also differ from men who have served, demographically and in health outcomes. Compared to men, women who have served are more likely to be racial/ethnic minorities, younger, and more educated, yet they have a similar or higher burden of certain physical and mental illnesses.⁹ Similarly, research shows that women who have served have different demographic profiles than civilian women. Despite being more highly educated and having higher incomes, women with military service face a greater burden of many health concerns than civilian women.³

The last decade has seen a growth in research addressing the health of women veterans and women currently serving. However, important knowledge gaps remain on the leading health concerns facing these women. First, the large majority of health-related studies have focused exclusively on patients utilizing VA services, with

In this report, **women who have served** are defined as those who have ever served in the U.S. Armed Forces.*

*See page 27 for a more in-depth discussion.

very few being population-based or broadly focused. Second, many have concentrated on specific health topics, very often addressing severe mental illness such as post-traumatic stress disorder (PTSD). And finally, more recent research has focused on military women in the post-9/11 wars in Iraq and Afghanistan. Much less is known about the overall health of women who have served, including data on subpopulations and trends over time across health outcomes, behaviors, clinical care, and other well-being measures. In addition, there are few, if any, resources that monitor, regularly report, and compare trends on the broader health of women who have served.

In 2016, *America's Health Rankings*® launched the *Health of Those Who Have Served Report*, providing a national baseline portrait and data resource to monitor the health of men and women who have served in the U.S. Armed Forces. Findings from this report revealed that women who have served face mental, behavioral, and health concerns distinct from both men who have served and women who have not, pointing to the need to develop a deeper understanding of the health of those currently serving and veteran women over time.

This edition of the *America's Health Rankings*® *Health of Women Who Have Served Report* provides a national overview of the health and well-being of women who have ever

served in the U.S. Armed Forces. It is intended as a resource for advocates, policymakers, government officials, and constituents at the national, state, and local levels to:

- **Describe and compare the health of women who have served to those who have not served** across 23 measures of behaviors, health outcomes, clinical care, community and environment, and policy, overall and by age and race/ethnicity.
- **Provide a benchmark to monitor trends over time** for women who have served, overall and in comparison to those who have not served.
- **Build awareness of the breadth of health issues** facing women who have served and how those issues compare to civilian women.
- **Stimulate dialogue and action** to inform health priorities and interventions targeting women who have served, recognizing that this group is a fast-growing segment of the military, veteran, and general U.S. population with distinct health needs.
- **Inform areas of future research** to fill important knowledge gaps on the physical, behavioral, and mental health issues facing women who have served.

1. U.S. Department of Veterans Affairs. Women Veterans Report: The Past, Present, and Future of Women Veterans. February 2017. Available at: https://www.va.gov/vetdata/docs/SpecialReports/Women_Veterans_2015_Final.pdf.
2. U.S. Department of Defense. 2015 Demographics: Profile of the Military Community. Available at: <http://download.militaryone-source.mil/12038/MOS/Reports/2015-Demographics-Report.pdf>.
3. Patten E and Parker K. Women in the U.S. Military: Growing Share, Distinctive Profile. *Pew Social & Demographic Trends*, December 2011. Available at: <http://www.pewsocialtrends.org/files/2011/12/women-in-the-military.pdf>.
4. National Center for Veterans Analysis and Statistics. America's Women Veterans: Military Service History and VA Benefit Utilization. *U.S. Department of Veterans Affairs, Washington, DC*, November 2011. Available at: https://www.va.gov/vetdata/docs/specialreports/final_womens_report_3_2_12_v_7.pdf.
5. Nanda N et al. Women Veteran Economic and Employment Characteristics. U.S. Department of Labor, Washington, DC, February 2016. Available at: <https://www.dol.gov/asp/evaluation/completed-studies/WomenVeteranEconomicandEmploymentCharacteristics.pdf>.
6. Murphy FM and Hans S. Women Veterans: The Long Journey Home. *Disabled American Veterans*, 2014. Available at: <https://www.dav.org/wp-content/uploads/women-veterans-study.pdf>.
7. Mulhall E. Women Warriors: Supporting She 'Who has Borne the Battle.' *Iraq and Afghanistan Veterans of America*, October 2009. Available at: http://media.iava.org/IAVA_WomenWarriors_2009.pdf.
8. Wilson LC. The Prevalence of Military Sexual Trauma: A Meta-analysis. *Trauma, Violence, & Abuse*, 2016; DOI: <https://doi.org/10.1177/1524838016683459>.
9. Lehavot K et al. Health Indicators for Military, Veteran, and Civilian Women. *American Journal of Preventive Medicine*, 2012; 42(5):473-480.

Design

Overview

America's Health Rankings® Health of Women Who Have Served Report was developed with guidance from a panel of experts 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 expert panel, see page 28.

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 women who have ever served in active duty (over 5,000 annually).

Data from the Substance Abuse and Mental Health Services Administration's (SAMHSA)

National Survey on Drug Use and Health (NSDUH) and the CDC's *National Health Interview Survey* (NHIS) are also included. 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 300 women who have served. NHIS is the nation's largest in-person household health survey conducted since 1957 and includes an annual sample of nearly 600 women who have served.

Definition of Women Who Have Served

Women who have served are defined in this report as "women who have ever served in the U.S. Armed Forces." While all three data sources utilize 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 27.

BRFSS IS THE WORLD'S LARGEST
ANNUAL POPULATION-BASED TELEPHONE SURVEY CONDUCTED
SINCE 1984. IT INCLUDES A SAMPLE OF NEARLY 5,000 WOMEN
EACH YEAR WHO HAVE SERVED.

Measures

The selection of the 23 measures that make up *America's Health Rankings® Health of Women Who Have Served Report* were driven by three factors:

- Measures must represent overall health conditions, behaviors, and care issues most pertinent to women 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 women who have served and not served overall, for two points in time, and where possible, by age and race/ethnicity.
- 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 four years of data, 2012-2015, drawn from BRFSS, NSDUH, and NHIS. Data were analyzed using survey weights and age-adjusted into two- and four-year periods as follows:

- **Baseline, 2012-2013:** provides a baseline with which to identify changes over time;
- **Current, 2014-2015:** provides the most current data and an opportunity to measure change since the baseline year; and
- **Combined, 2012-2015:** provides estimates stratified by age and race/ethnicity. Data were pooled over four years instead of two to produce reliable estimates within the age and race/ethnicity categories.

Age Adjustment

Women who have served on active duty have a different age distribution than the general U.S. female 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 women who have and have not served. Age-adjusted prevalence estimates should be understood as relative estimates, not as actual measures of burden. For details on age-adjustment, see *Methodology*, on page 26.

Findings

Overview

This report provides a national baseline and comparative portrait of the health of women who have served on active duty in the U.S. Armed Forces and those who have not. Findings highlight the positive health experiences as well as health challenges affecting women who have served. In particular, key findings from the most recent period, 2014-2015, indicate that as compared to women who have not served, those who have served have:

- Significantly higher overall rates of mental illness including depression, any mental illness in the past year, and suicidal thoughts in the past year.
- Better overall self-reported health status, yet significantly higher rates of chronic disease such as cardiovascular disease, COPD, cancer, and arthritis.
- Significantly higher overall rates of health insurance coverage, access to primary care, and utilization of preventive services such as cancer screenings.
- Significantly lower overall rates of physical inactivity and obesity, yet higher rates of insufficient sleep.

Beyond overall differences in the health of women who have and have not served, significant differences in health experiences exist by age and race/ethnicity. For example, minority women who have served generally experience positive socioeconomic and clinical care benefits compared to minority women who have not served. At the same time, some minority women face higher rates of unhealthy behaviors such as smoking and excessive drinking than their peers who have not served. And while rates of chronic disease generally rise with age, among women aged 50 years and older, those who have served have significantly higher rates of cancer,

Beyond overall differences in the health of women who have and have not served, significant differences in health experiences exist by age and race/ethnicity.

cardiovascular disease, and other conditions than those who have not served.

The sections that follow provide a summary of key overall and population-specific findings across behavior, policy, community and environment, clinical care, and health outcome measures. Complete data on all 23 measures can be accessed at <http://www.americashealthrankings.org/hwwhs2017-explore>.

Behaviors

Unhealthy behaviors can have serious long-term health implications for women, including increased risk for chronic disease, disability, and premature mortality. Certain unhealthy behaviors are also symptoms or coping responses common among women experiencing psychological distress.

Findings from this study suggest that women who have served report significantly lower rates of physical inactivity and obesity than those who have not served; however they report higher rates of insufficient sleep. Rates of excessive drinking and smoking are similar between those who have and have not served.

More detailed findings on behavior measures for women who have and have not served show that:

- Minority women who have served generally have lower rates of obesity and physical inactivity, yet higher rates of insufficient sleep and smoking than minority women who have not served.



STRENGTHS

Women who have served report better overall health experiences on seven behavior, policy, clinical care, and health outcome measures than those who have not served.

Strengths Among Women Who Have Served, 2014-2015

Behaviors	Served	Not Served
Obesity	25.7%	28.6%
Physical Inactivity	21.6%	26.0%
Policy		
Health Insurance	92.7%	87.6%
Clinical Care		
Cancer Screenings	76.7%	71.7%
Dedicated Health Care Provider	84.0%	82.0%
Unmet Medical Need	10.8%	16.0%
Health Outcomes		
High Health Status	56.4%	50.8%



CHALLENGES

Women who have served face greater challenges across nine behavior and health outcome measures than those who have not served.

Challenges Among Women Who Have Served, 2014-2015

Behaviors	Served	Not Served
Insufficient Sleep	41.7%	34.4%
Health Outcomes		
Any Cancer	13.1%	11.3%
Any Mental Illness in Past Year	30.8%	21.7%
Arthritis	30.7%	26.5%
COPD	8.0%	6.7%
Cardiovascular Disease	7.9%	6.8%
Depression	25.1%	21.6%
Functional Impairment	28.8%	22.4%
Suicidal Thoughts in Past Year	8.1%	4.2%



SIMILARITIES

Women who have served report overall rates that are not significantly different from civilian women on seven behavior, community and environment, and health outcome measures.

Similarities Between Women Who Have and Have Not Served, 2014-2015

Behaviors	Served	Not Served
Excessive Drinking	13.1%	13.4%
Smoking	16.5%	15.2%
Community & Environment		
Employment	89.4%	88.7%
Food Insecurity	16.1%	17.7%
Health Outcomes		
Anxiety	16.9%	13.8%
Diabetes	8.9%	9.0%
Pain	38.8%	35.4%

Findings

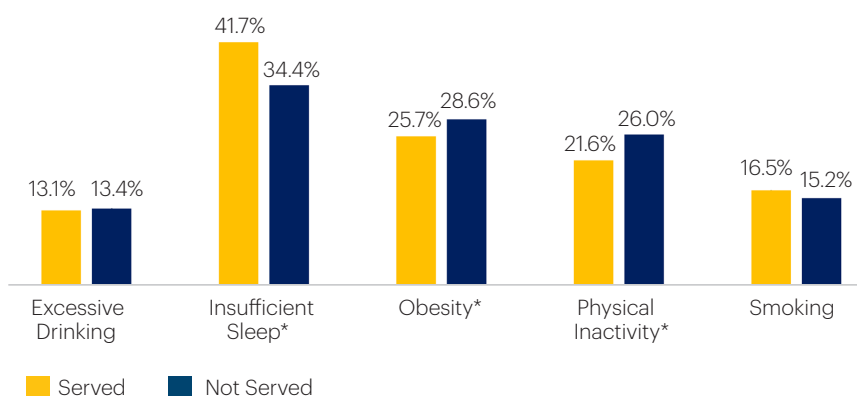
- On measures of insufficient sleep, smoking, and excessive drinking, certain groups of minority women who have served report significantly higher rates than minority women who have not served.
- Smoking rates are nearly four times as high for Asian women who have served than those who have not served (16.5% vs. 4.2%).
- Excessive drinking rates are about twice as high for Hawaiian/Pacific Islander women who have served than those who have not served (22.2% vs. 11.3%).
- Younger women aged 18 to 34 years who have served have lower rates of obesity and physical inactivity, yet they have higher rates of insufficient sleep as compared to their peers who have not served.
- Women aged 50 years and older who have served have significantly higher rates of smoking than women who have not served (15.3% vs. 12.8%).
- Women aged 35 years and older who have served have similar rates of obesity as women who have not served.



How Do Women and Men Who Have Served Compare on Health Behaviors?

The **2016 America's Health Rankings®** *Health of Those Who Have Served Report* revealed that in 2013-2014, women who have served reported lower overall rates of excessive drinking (12.8% vs 21.7%), smoking (17.5% vs. 22.7%), and obesity (25.1% vs. 29.0%) than men who have served. They reported similar rates of insufficient sleep (42.5% vs. 43.4%). While both men and women who have served were less physically inactive than those who have not served, rates of physical inactivity were higher for women than men (21.9% vs. 19.3%).

Behavior Rates for Women Who Have and Have Not Served, 2014-2015



*Statistically significant difference between women who have served and women who have not served.

Policy

One policy indicator, health insurance, is measured in this report. Women with health insurance often have greater access to health care, and experience better health outcomes than uninsured women.

In this study, women who have served report significantly higher rates of health insurance coverage than those who have not served (92.7% vs. 87.6%). Higher coverage rates among women who have served are likely attributable to policies that provide distinctive health insurance options for those who have served in the military. These include TRICARE for those currently serving or retired from military service and VA health benefits for those who served and were not dishonorably discharged.

For both women who have and have not served, health insurance coverage rates significantly increased between 2012-2013 and 2014-2015. This increase generally coincides with health insurance expansion policies that took effect on January 1, 2014 as part of the Affordable Care Act.

More detailed findings on health insurance for women who have and have not served show that:

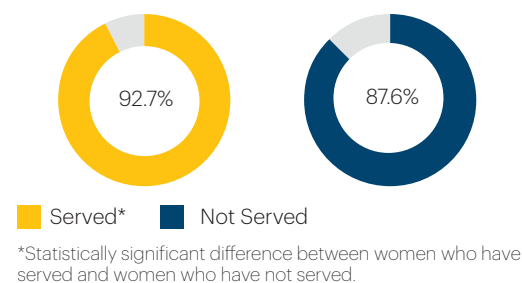
- Rates of coverage are significantly higher for many groups of minority women who have served as compared to those who have not. Of note, Hispanic women who have served have higher rates of coverage than Hispanic women who have not served (88.0% vs. 69.8%).
- Across all age groups, women who have served have higher rates of health insurance coverage than women who have not served.



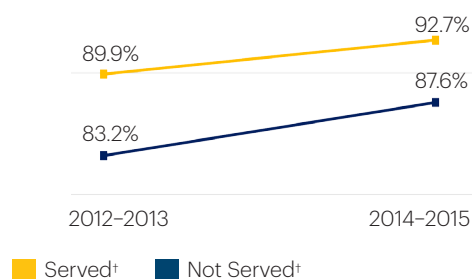
How Do Women and Men Who Have Served Compare on Health Insurance?

The **2016 America's Health Rankings® Health of Those Who Have Served Report** revealed that in 2013-2014, women and men who have served reported similar rates of health insurance coverage, 91.4% and 90.3%, respectively. Rates of coverage for both men and women who have served were higher than men and women who have not served.

Overall Health Insurance Rates for Women Who Have and Have Not Served, 2014-2015



Change in Health Insurance Rates for Women Who Have and Have Not Served, 2012-2013 to 2014-2015



Findings

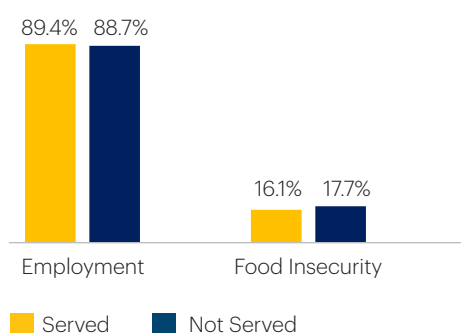
Community & Environment

Broader community and environmental factors, such as steady, livable wages and consistent access to nutritious food, play a key role in promoting conditions to enable people to achieve and maintain good health. On measures of employment and food insecurity, women who have served report similar overall rates as women who have not served.

More detailed findings on employment and food insecurity show that:

- Black, Hispanic, and multiracial women who have served report significantly higher rates of employment and lower rates of food insecurity than women in these groups who have not served.
- Younger women aged 18 to 25 years (89.5% vs. 81.2%) and aged 26 to 34 years (92.4% vs. 87.3%) who have served report significantly higher rates of employment than those who have not served.

Rates of Employment and Food Insecurity for Women Who Have and Have Not Served, 2014-2015



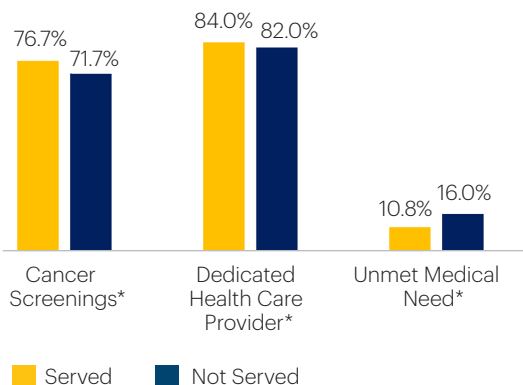
*Statistically significant difference between women who have served and women who have not served.

Clinical Care

Having a dedicated health care provider is an important predictor of having a usual source of care when needed, and increases women's opportunity to obtain crucial preventive screenings. Timely access to a personal or primary care provider is also linked to better health outcomes, and obtaining recommended preventive screenings is known to reduce mortality from chronic conditions such as cancer.

On all three measures of clinical care, women who have served report higher rates of access to and utilization of primary and preventive services. Women who have served report significantly higher rates of receiving recommended age-appropriate cancer screenings, including colorectal cancer screening, Pap smear, and mammogram, than those who have not served (76.7% vs. 71.7%). They are also more likely to have a dedicated health care provider (84.0% vs. 82.0%) and less likely to have unmet medical need due to cost than those who have not served (10.8% vs. 16.0%).

Clinical Care Rates for Women Who Have and Have Not Served, 2014-2015



*Statistically significant difference between women who have served and women who have not served.



How Do Women and Men Who Have Served Compare on Clinical Care Measures?

The **2016** *America's Health Rankings® Health of Those Who Have Served Report* revealed that in 2013-2014, women who have served reported higher rates of colorectal cancer screening (76.2% vs. 72.2%) and having a dedicated health care provider (82.6% vs. 71.7%) than men who have served. However, rates of unmet medical need due to cost were higher for women than men who have served (12.5% vs. 9.0%).

Unmet medical need due to cost significantly declined for both women who have and have not served between 2012-2013 and 2014-2015. This change may be due to greater health insurance uptake since the implementation of the Affordable Care Act's major health insurance policies.

Following are more detailed findings on clinical care measures for women who have and have not served:

- Minority women and women of all age groups who have served generally report better clinical care access and uptake than those who have not served.

On all three measures of clinical care, women who have served report higher rates of access to and utilization of primary and preventive services.

- Black (12.9% vs. 21.3%), Hispanic (14.4% vs. 25.8%), and multiracial (16.1% vs. 21.7%) women who have served report significantly lower rates of unmet medical need due to cost than women in these groups who have not served.
- Hispanic (82.8% vs. 70.5%) and Asian (89.4% vs. 81.8%) women who have served report higher rates of having a dedicated health care provider than Hispanic and Asian women who have not served.
- Black (83.4% vs. 76.4%), Hispanic (75.0% vs. 69.7%), Asian (80.0% vs. 65.9%), and Hawaiian/Pacific Islander (77.6% vs. 64.7%) women who have served report significantly higher rates of receiving recommended cancer screenings than women in these groups who have not served.
- In contrast to patterns observed among minority women, white women who have served report significantly lower rates of having a dedicated health care provider than their peers who have not served (82.7% vs. 85.3%).

Findings

Health Outcomes

Many women experience mental or physical illness that negatively impacts their overall well-being. Chronic health conditions can limit activities of daily living, interfere with one's ability to function at work, school, or as a family caretaker, and increase the likelihood of premature death. Research has also shown chronic disease and mental illness are frequently risk factors for one another, and symptoms of mental distress can make chronic disease management more challenging.¹⁰

Women who have served report better overall health status, yet experience higher rates of many mental and chronic conditions, than those who have not served. Findings on health outcomes in this section are organized by overall health status, mental health, and chronic conditions.

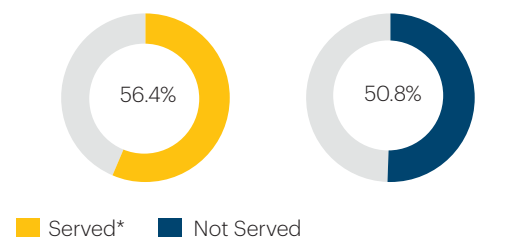
OVERALL HEALTH STATUS

Women who have served report significantly higher rates of high health status than women who have not served (56.4% vs. 50.8%).

Detailed findings indicate that:

- Minority women who have served, particularly blacks (49.1% vs. 40.5%), Hispanics (49.8% vs. 32.3%), Hawaiians/Pacific Islanders (63.3% vs. 45.3%), and American Indians/Alaska Natives (43.7% vs. 37.4%), report significantly higher rates of high health status than those who have not served.
- Across all age groups, women who have served are significantly more likely to report high health status than women who have not served.

Overall Rates of High Health Status for Women Who Have and Have Not Served, 2014-2015



*Statistically significant difference between women who have served and women who have not served.

MENTAL HEALTH

Four measures of mental health are included in this report. Across three measures, women who have served report significantly higher rates of mental health concerns than those who have not served: having ever been diagnosed with depression (25.1% vs. 21.6%), having any mental illness in the past year (30.8% vs. 21.7%), and having suicidal thoughts in the past year (8.1% vs. 4.2%).

Following are more detailed findings on mental health measures for women who have and have not served:

- Women aged 35 to 49 years who have served have significantly higher rates of any mental illness in the past year (33.2% vs. 23.6%) and diagnosis of depression (27.2% vs. 23.0%) than women in this age group who have not served.
- White women who have served are more likely to have a mental illness than white women who have not served. For example, rates of depression are significantly higher for white women who have served than those who have not served (27.1% vs. 24.5%).
- Asian women who have served report nearly twice the rate of depression than Asian women who have not served (16.8% vs. 7.7%), however,

¹⁰ National Institute of Mental Health. Chronic Illness and Mental Health, 2015. Available at: <https://www.nimh.nih.gov/health/publications/chronic-illness-mental-health/index.shtml>.



How Do Women and Men Who Have Served Compare on Mental Health Measures?

The **2016 America's Health Rankings® Health of Those Who Have Served Report** revealed that in 2013-2014, women who have served reported higher rates of depression (25.5% vs. 14.7%) and frequent mental distress in the past 30 days (14.5% vs. 10.3%) than men who have served.

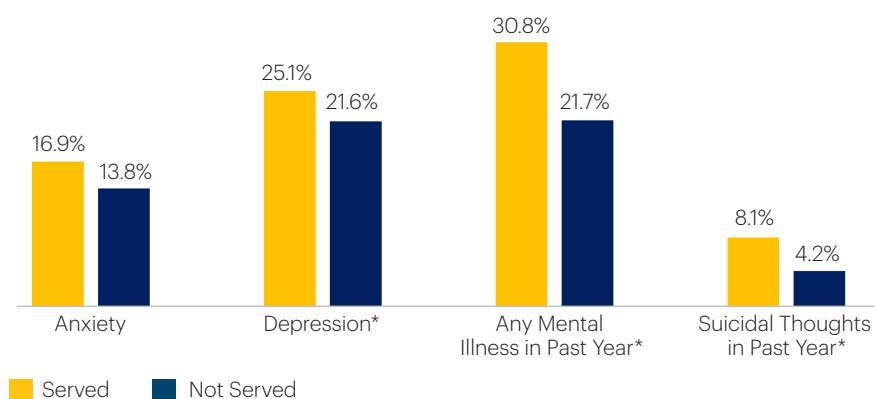
others, such as Hawaiian/Pacific Islanders who have served report lower rates of depression than those who have not served (9.6% vs. 15.6%).

CHRONIC CONDITIONS

Seven self-reported measures of chronic disease are included in this report. Women who have served report higher overall rates on five of these measures (arthritis, any cancer, cardiovascular disease, COPD, and functional impairment) as compared to women who have not served. Rates of diabetes and pain are similar for women who have and have not served. Detailed findings indicate that:

- Among women aged 50 years and older, those who have served report significantly higher rates of most chronic conditions than those who have not served: arthritis (51.6% vs. 48.6%), any cancer (23.4% vs. 21.6%), cardiovascular disease (16.1% vs. 13.8%), COPD (14.7% vs. 11.2%), and functional impairment (39.5% vs. 33.4%).
- White women who have served report poorer outcomes for many chronic conditions than white women who have not served, such as arthritis (31.7% vs. 27.7%), cardiovascular disease (7.9% vs. 6.4%), COPD (9.0% vs. 7.0%), and functional impairment (28.7% vs. 23.0%).

Rates of Mental Health Conditions for Women Who Have and Have Not Served, 2014-2015



*Statistically significant difference between women who have served and women who have not served.

Findings

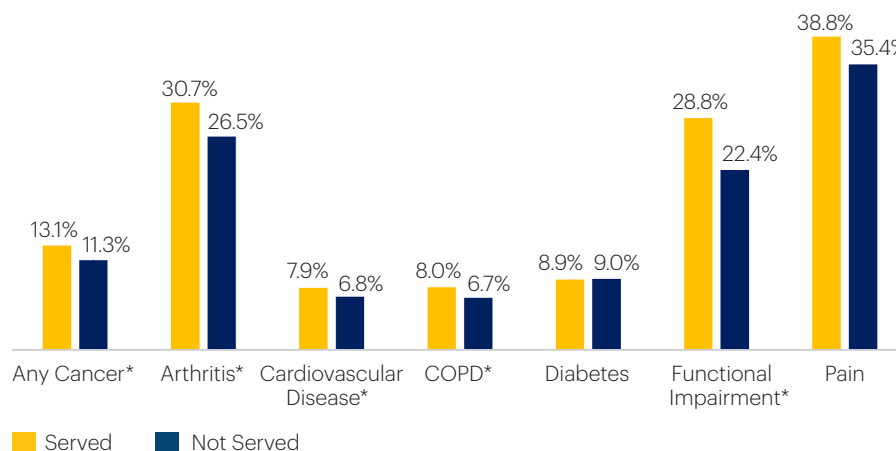


How Do Women and Men Who Have Served Compare on Chronic Conditions?

The **2016 America's Health Rankings® Health of Those Who Have Served Report** found that in 2013-2014, women who have served reported higher rates of chronic conditions than men who have served on measures of: arthritis (29.9% vs. 23.7%), any cancer (12.4% vs. 10.7%), COPD (8.7% vs. 6.3%), and functional impairment (27.8% vs. 24.5%).

- Some minority women who have served report higher rates of chronic conditions, such as any cancer, than those who have not served: Hispanics (8.8% vs. 5.9%), Hawaiians/Pacific Islanders (13.5% vs. 8.3%), and American Indians/Alaska Natives (14.6% vs. 10.3%).
- Over two in five multiracial women who have served report functional impairment (41.5%), a rate higher than all other racial/ethnic groups who have and have not served.
- Asian women who have served report significantly poorer health outcomes on a number of measures than Asian women who have not served. Of note, they have significantly higher rates of functional impairment (24.0% vs. 12.0%), diabetes (14.4% vs. 8.2%), and cardiovascular disease (6.6% vs. 4.2%) than those who have not served.
- Across all age groups, women who have served report significantly higher rates of functional impairment than women who have not served. In addition, the highest rate of functional impairment is reported among multiracial women who have served.
- Women aged 26 to 34 years who have served report nearly twice the rate of arthritis as women in this age group who have not served (15.3% vs. 8.6%).

Rates by Chronic Condition for Women Who Have and Have Not Served, 2014-2015



*Statistically significant difference between women who have served and women who have not served.

Conclusion

America's Health Rankings® Health of Women Who Have Served Report establishes a national baseline portrait and distinctive data resource on the overall health of women who have served in the U.S. Armed Forces. Findings confirm key differences in health outcomes and their determinants between women who have and have not served.

Women who have served generally report having a more positive outlook on health than those who have not served, including being more physically active and reporting better general health status. They also experience better access to health insurance coverage, primary care, and preventive services. These advantages are especially pronounced for many minority women who have served. However, despite these positive experiences, women who have served report higher rates of chronic disease, mental illness, and insufficient sleep than their counterparts who have not served. Many of these mental health and chronic disease rates are also higher than those of men who have served as was revealed by the 2016 *Health of Those Who Have Served Report*.

America's Health Rankings® Health of Women Who Have Served Report fills an important research gap identified through previous studies by comparing women who have served to their civilian counterparts on

Women who have served generally report having a more positive outlook on health than those who have not served, including being more physically active and reporting better general health status.

a broad set of health measures drawn from large population-based surveys over time. It provides important insight and identifies potential priorities to inform national, state, and local dialogue and action to improve the overall health and well-being of women who have served. At the same time, this report underscores the need for ongoing research and data to develop a better understanding of the factors and circumstances which contribute to the distinct health experiences and challenges faced by women who have served. Indeed, continued monitoring is crucial to informing future priorities, policies, and interventions to better care for the very women who have served to protect this country.

Description of Measures

Data on 18 measures were obtained from the Centers for Disease Control and Prevention's (CDC) *Behavioral Risk Factor Surveillance System* (BRFSS), CDC's *National Health Interview Survey* (NHIS) and the Substance Abuse and Mental Health Services

Administration's *National Survey on Drug Use and Health* (NSDUH) were the source of two and three measures, respectively. Unless otherwise indicated, all data are from 2012-2015.

Behaviors	Measure	Description	Source
	Excessive Drinking	Percentage of women who reported either binge drinking (having four or more drinks on one occasion in the past month) or chronic drinking (having eight or more drinks per week)	BRFSS
	Insufficient Sleep	Percentage of women who reported sleeping less than seven hours in a 24-hour period, on average	BRFSS
	Obesity	Percentage of women with a body mass index of 30.0 or higher based on reported weight and height	BRFSS
	Physical Inactivity	Percentage of women who reported doing no physical activity or exercise other than their regular job in the past 30 days	BRFSS
Policy	Smoking	Percentage of women who are smokers (reported smoking at least 100 cigarettes in their lifetime and currently smoke every or some days)	BRFSS
	Health Insurance	Percentage of women who reported having health insurance privately, through their employer, or through the government	BRFSS
Community & Environment	Employment	Percentage of women who are in the workforce and are either employed for wages or self-employed	BRFSS
	Food Insecurity	Percentage of women who faced the threat of hunger in the past 30 days	NHIS
Clinical Care	Cancer Screenings	Percentage of women who reported receiving all age-appropriate recommended cancer screening tests (colorectal cancer screenings, Pap smear, mammography) within the recommended time interval for each test	BRFSS
	Dedicated Health Care Provider	Percentage of women who reported having one or more people they think of as their personal doctor or healthcare provider	BRFSS
	Unmet Medical Need	Percentage of women who reported there was a time in the past 12 months when they needed to see a doctor but could not because of cost	BRFSS

Outcomes

Measure	Description	Source
Anxiety	Percentage of women who reported ever being told by a health professional that they have an anxiety disorder	NSDUH (2012-2014)
Any Cancer	Percentage of women who reported being told by a health professional that they have skin cancer or some other form of cancer	BRFSS
Any Mental Illness in the Past Year	Percentage of women having serious, moderate, or mild mental illness in the past year	NSDUH
Arthritis	Percentage of women who reported being told by a health professional that they have some form of arthritis	BRFSS
Cardiovascular Disease	Percentage of women who reported being told by a health professional that they had angina or coronary heart disease, heart attack, or stroke	BRFSS
COPD	Percentage of women who reported being told by a health professional that they have Chronic Obstructive Pulmonary Disease (COPD)	BRFSS
Depression	Percentage of women who reported ever being told by a health professional that they have a depressive disorder including depression, major depression, minor depression, or dysthymia	BRFSS
Diabetes	Percentage of women who reported being told by a health professional that they have diabetes (excludes pre-diabetes and gestational diabetes)	BRFSS
Functional Impairment	Percentage of women who reported being limited in any way in any activities because of physical, mental, or emotional problems or have any health problem that requires them to use special equipment such as a cane, wheelchair, a special bed, or a special telephone	BRFSS
High Health Status	Percentage of women who reported that their health is very good or excellent	BRFSS
Pain	Percentage of women who reported having neck pain or lower back pain in the past three months	NHIS
Suicidal Thoughts in the Past Year	Percentage of women who reported seriously thinking about trying to kill themselves in the past year	NSDUH

Methodology and Limitations

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).

Four years of data are included: 2012, 2013, 2014, and 2015. To ensure adequate sample size for the number of people who have served, two years of data are combined into 2012-2013 and 2014-2015 for the overall populations of women who have served and women who have not served. For analysis by race/ethnicity and age, all four years of data are combined.

Data were analyzed using survey weights. Point estimates are reported for women who have served and women who have not, overall and by race/ethnicity and age. To reflect the differing age distribution of women who have and have not served, data have been age-adjusted to the 2000 U.S. Standard Population.

Age-adjusted rates are included in the body of the report, while unadjusted rates are available upon request.

BRFSS Sample Size for Women Who Have and Have Not Served by Year

	2012	2013	2014	2015
Served	4,997	5,439	5,408	5,228
Not Served	273,573	279,846	260,605	244,658
Total	278,570	285,285	266,013	249,886

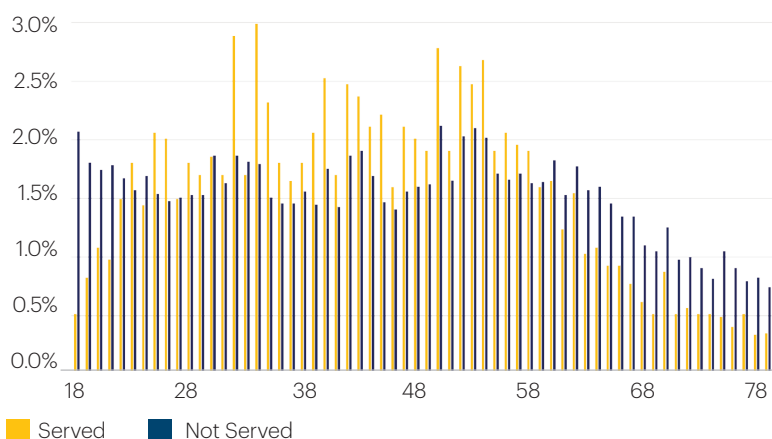
NSDUH Sample Size for Women Who Have and Have Not Served by Year

	2012	2013	2014	2015
Served	253	270	308	318
Not Served	19,860	19,942	21,951	23,415
Total	20,113	20,212	22,259	23,733

NHIS Sample Size for Women Who Have and Have Not Served by Year

	2012	2013	2014	2015
Served	563	584	636	591
Not Served	41,645	40,350	43,379	40,382
Total	42,208	40,934	44,015	40,973

Weighted Age Distribution of Women Who Have Served vs. Have Not Served, BRFSS 2014-2015



Limitations

Given the large annual sample sizes present 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 ensures representation by multiple demographic variables, including race/ethnicity and age.

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, the 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, 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 Reserves or National Guard without being activated. For the time period analyzed, none of

the surveys allow analysis by the nature of discharges, involvement in active combat, or the era in which one served. Additionally, the samples of women 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 a respondent has 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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Data within this report were obtained from:

- US Department of Health and Human Services
- Centers for Disease Control and Prevention
- Behavioral Risk Factor Surveillance System
- National Health Interview Survey
- Substance Abuse and Mental Health Services Administration
- National Survey on Drug Use and Health

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Guided by a passion to help people live healthier lives, United Health Foundation provides helpful information to support decisions that lead to better health outcomes and healthier communities. The Foundation also supports activities that expand access to quality health care services for those in challenging circumstances and partners with others to improve the well-being of communities.



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