

ANNUAL WARRIOR SURVEY

LONGITUDINAL: WAVE 1



ADMINISTERED BY:
NORC at the
University of
Chicago

FUNDED BY:
CSX

WRITTEN BY:
WWP



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The execution of this survey and delivery of findings could not have been possible without the support and guidance of Amanda Peterson of WWP and NORC at the University of Chicago's project team. We would like to give special thanks to Vince Welch, Heidi Whitmore, Erin Fordyce, Devi Chelluri, and NORC's supporting team members for their efforts in instrument review, survey weighting methodology, and administration of the Annual Warrior Survey.

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	6
- ABOUT WOUNDED WARRIOR PROJECT	6
- AIM	6
- OVERALL FINDINGS	6
- ABOUT THE ANNUAL WARRIOR SURVEY	7
- WHO THIS REPORT REPRESENTS	8
- POPULATION SAMPLING	9
- UPDATES TO THE 2021 ANNUAL WARRIOR SURVEY DESIGN AND METHODOLOGY	10
- HOW TO INTERPRET THIS REPORT	12
DEMOGRAPHICS	14
- AGE	14
- SEX	15
- RACE AND ETHNICITY	16
- SEXUAL ORIENTATION	17
- MARITAL STATUS	18
- EDUCATION	20
- HOUSEHOLD CHARACTERISTICS	21
- GEOGRAPHIC LOCATION	24
MILITARY EXPERIENCE	27
- CURRENT MILITARY STATUS	27
- BRANCH OF SERVICE	28
- DEPLOYMENT HISTORY	28
- PAY GRADE/RANK	29
VA BENEFITS	32
- EDUCATION BENEFITS	32
- VETERAN READINESS AND EMPLOYMENT PROGRAM	33
- VA RATINGS	33
- PHYSICAL EVALUATION BOARD RATINGS	35
VETERAN IDENTITY	37
SERVICE-RELATED INJURIES AND HEALTH PROBLEMS	40
- SELF-REPORTED INJURIES AND HEALTH PROBLEMS	40
- MILITARY SEXUAL TRAUMA	41
- AMPUTATIONS AND PROSTHETICS	42
- AID AND ASSISTANCE NEEDED (CAREGIVING)	43
- HOUSEBOUND	45
- TOXIC EXPOSURES	46
WHOLE-HEALTH WELLNESS	52
- OVERALL QUALITY OF LIFE	52
- BODY MASS INDEX	53
- PHYSICAL ACTIVITY	54
- CHRONIC PAIN	55
- SLEEP QUALITY	56
- SUBSTANCE USE	58

BRAIN HEALTH	61
- HEAD-RELATED TRAUMA.....	61
- TRAUMATIC BRAIN INJURIES	63
MENTAL HEALTH	65
- ANXIETY	65
- DEPRESSION	66
- POST-TRAUMATIC STRESS DISORDER.....	67
- SELF-DIRECTED VIOLENCE.....	68
ACCESS TO HEALTH CARE	71
- HEALTH CARE COVERAGE.....	71
- HEALTH CARE PROVIDERS	72
- HEALTH CARE SERVICES	73
- BARRIERS TO CARE	74
- TELEHEALTH	77
- WOMEN'S HEALTH	78
EMPLOYMENT	83
- LABOR FORCE	83
- UNEMPLOYMENT	84
- WARRIORS NOT IN THE LABOR FORCE	86
- INDUSTRIES OF EMPLOYMENT.....	86
- WAGES.....	87
- EMPLOYMENT FULFILLMENT	88
FINANCIAL WELLNESS	91
- FINANCIAL WELL-BEING	91
- FINANCIAL STRAIN.....	92
- FOOD SECURITY	94
- HOMELESSNESS.....	96
CONNECTION	98
- EMOTIONAL SUPPORT	98
- LONELINESS	98
- RESILIENCE	99
SPECIAL INTEREST TOPICS	101
- COVID-19.....	101
- GAMING.....	102
CONCLUSION	105
APPENDIX	107
- SURVEY POPULATION.....	107
- SURVEY DEVELOPMENT.....	107
- QUESTIONNAIRE	108
- METHOD	109
- FINAL CASE DISPOSITION	112
- RESPONSE RATE	112
- INCENTIVE	113
- WEIGHTING	113
- REFERENCES.....	116

WOUNDED WARRIOR
CLAUDE BOUSHEY

A man in a dark flight suit stands in front of a military aircraft. He is holding a white helmet with black and red details. A name tag on his chest reads "CLAUDE J BOUSHEY PILOT". The aircraft behind him has a large white number "9" on a dark background. The entire image has a blue tint.

EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

ABOUT WOUNDED WARRIOR PROJECT

Wounded Warrior Project is a nonprofit 501(c)(3) veterans service organization that is transforming the way America's injured post-9/11 veterans are empowered, employed, and engaged in their communities. WWP supports warriors through and beyond their transitions to civilian life with services in mental health, physical health, peer connection, career counseling, and financial wellness.

In addition to its direct services to warriors, WWP advocates before Congress, the Department of Veterans Affairs (VA), and the Department of Defense (DoD) for veteran policies and initiatives that make a real difference. These efforts have led to the creation and passage of life-changing legislation, including the Servicemembers' Group Life Insurance Traumatic Injury Protection program, the Caregivers and Veterans Omnibus Health Services Act of 2010, the Ryan Kules and Paul Benne Specially Adaptive Housing Improvement Act of 2019, and the Veteran Families Financial Support Act of 2020.

WWP programs, services, and advocacy efforts are all driven by the greatest needs of warriors, informed by the responses to this survey.

AIM

The Annual Warrior Survey aims to accurately predict the effects of aging and particular life and societal events and to identify emerging health trends among WWP warriors over time.

OVERALL FINDINGS

WWP warriors are mostly male (82.9%), white (64.1%), and married (66%); have at least one child living within the household (60%); have a bachelor's degree or higher (43%), with a median range household income between \$50,000 and \$74,999; and are living in urban areas (94.8%). Most served in the Army (64.2%) and have deployed at least one time (93.1%). Sleep problems (78%) are the most frequently self-reported injury or health problem, with the other three of the top four self-reported service-related injuries being related to mental health. During military service, 97.9% of warriors report exposure to hazardous or toxic substances, and 67.1% of female WWP warriors and 5.8% of male WWP warriors have experienced military sexual trauma. Nearly one in four warriors had suicidal thoughts in the last 12 months. The more predominant barriers to care were difficulty or putting off getting the care needed for physical injuries or problems (41.3%). Warriors have higher rates of unemployment (13.4%) when compared to other populations. Roughly one in three warriors are food insecure. WWP warriors cite challenges with veteran identity, with 85.9% agreeing that *people who aren't in the military don't understand what it's like to be a veteran*.

ABOUT THE ANNUAL WARRIOR SURVEY

WWP's 2021 Annual Warrior Survey has grown to represent over 152,000 post-9/11 veterans across the continental U.S. and its territories. The Annual Warrior Survey gives WWP's more than 152,000 members a platform to be heard by individuals and organizations who have the power to initiate change. This data provides a 360-degree view of the warriors WWP serves and allows us to track and treat warriors' most pressing needs in areas such as mental, physical, and financial wellness. It guides WWP's efforts as well as the efforts of those who share and support our mission of honoring and empowering warriors.

The 2021 WWP Annual Warrior Survey is the 12th annual administration of the survey. The 12th Annual Warrior Survey has transitioned from a cross-sectional census (for which WWP previously attempted to collect data from all warriors) to a longitudinal sample survey (which follows the same warriors over time). The 2021 Annual Warrior Survey included survey questions addressing warrior demographics, military experience, service-connected injuries, whole health, access to health care, women-specific health, financial wellness, social connection, and support. The survey is not intended to measure the impact of individual WWP programs; however, WWP uses the annual survey data to determine how it can better serve its warriors through direct service programs and advocacy efforts.



WHO THIS REPORT REPRESENTS

152,499 WARRIORS REGISTERED WITH WWP

64.2%

ARMY

34.7%

NATIONAL GUARD
OR RESERVE

17.1%

MARINE
CORPS

15.2%

NAVY

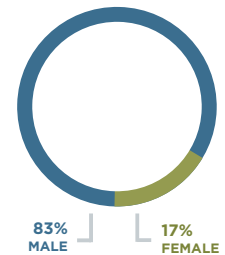
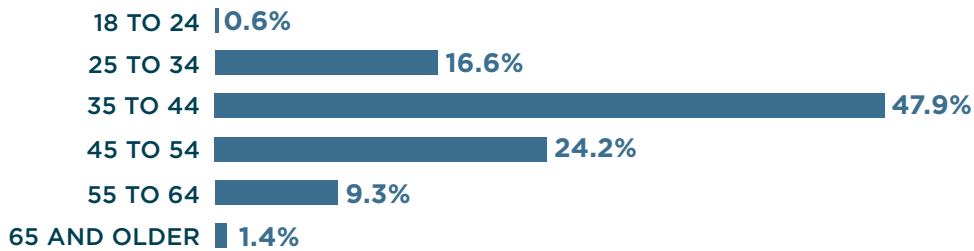
12.2%

AIR FORCE

1.2%

COAST
GUARD

AGE GROUPS



RACE

WHITE	64.1%
BLACK OR AFRICAN AMERICAN	15.1%
AMERICAN INDIAN/ALASKAN NATIVE	1.3%
ASIAN	2.2%
NATIVE HAWAIIAN/PACIFIC ISLANDER	1.1%
OTHER	8.5%
TWO OR MORE RACES	7.7%

ETHNICITY

MEXICAN, MEXICAN AMERICAN, CHICANO/A	9.0%
PUERTO RICAN	5.3%
CUBAN	0.7%
OTHER HISPANIC, LATINO/A, OR SPANISH ORIGIN	6.5%
NOT OF HISPANIC, LATINO/A, OR SPANISH ORIGIN	78.5%

Note: Hispanic origin is considered an ethnicity, not a race. The population that is Hispanic may be of any race.

DISABILITY RATINGS



**NEARLY 4 IN 5
WARRIORS HAVE A
DISABILITY RATING
OF 70% OR HIGHER.**

REGION



**CURRENTLY, 5.2%
OF WWP WARRIORS
LIVE IN RURAL AREAS.**

POPULATION SAMPLING

The 2021 Annual Warrior Survey was administered by NORC and was sent to nearly 90,000 WWP warriors: 60,000 were included in the first round of invitations, 15,000 in the second, and 15,000 in the third. Data collection continued for 12 weeks from June 2 to Aug. 30, 2021. A multimodal survey recruitment approach was used for the 2021 survey. Warriors received weekly email and text message reminders in addition to several postal mail reminders throughout the field period. To thank warriors and increase overall participation, those who submitted the survey were offered a tactical survival wristband.

The final response rate for 2021 was 19.7% (17,693 completed surveys among 89,915 eligible WWP warriors in the survey population) and represents the 152,499 warriors registered with WWP as of April 2021. Appendix includes more details on survey methods and administration.



Tactical wristbands given to warriors who participated in the 2021 survey.



UPDATES TO THE 2021 ANNUAL WARRIOR SURVEY DESIGN AND METHODOLOGY

New survey design elements:

- **Longitudinal survey design**
- **New topics and updates to existing topics**
- **Increased warrior engagement in design**
- **Additional option to participate: paper-and-pencil option**

The first Annual Warrior Survey was administered in 2010 and has been revised over the years to collect the most timely and pertinent information as the needs of warriors evolve. As part of this evolution and WWP's commitment to understanding warriors' most pressing needs, the 2021 survey underwent significant revisions from prior years.

In partnership with industry-leader NORC at the University of Chicago, WWP performed a yearlong deep dive into all aspects of the Annual Warrior Survey. The deep-dive and revision process was warrior-centric first and foremost; WWP engaged warriors in the process to ensure that the warrior voice and the warrior experience were ever present in the redesign of the survey. The redesign process also took into consideration the end users of the survey data — WWP, Congress, the VA, and fellow military and veteran service organizations. With guidance from WWP, NORC conducted a series of focus groups and expert panels with WWP warriors, warrior family members and caregivers, partner organizations, and subject matter experts to better understand emerging needs.

NEW TOPICS AND UPDATES TO EXISTING TOPICS

These deep-dive discussions helped identify sources for new questions on topics such as suicide, toxic exposures, and women's health. As it is a timely issue, questions also remained about COVID-19.

New and expanded items in 2021:

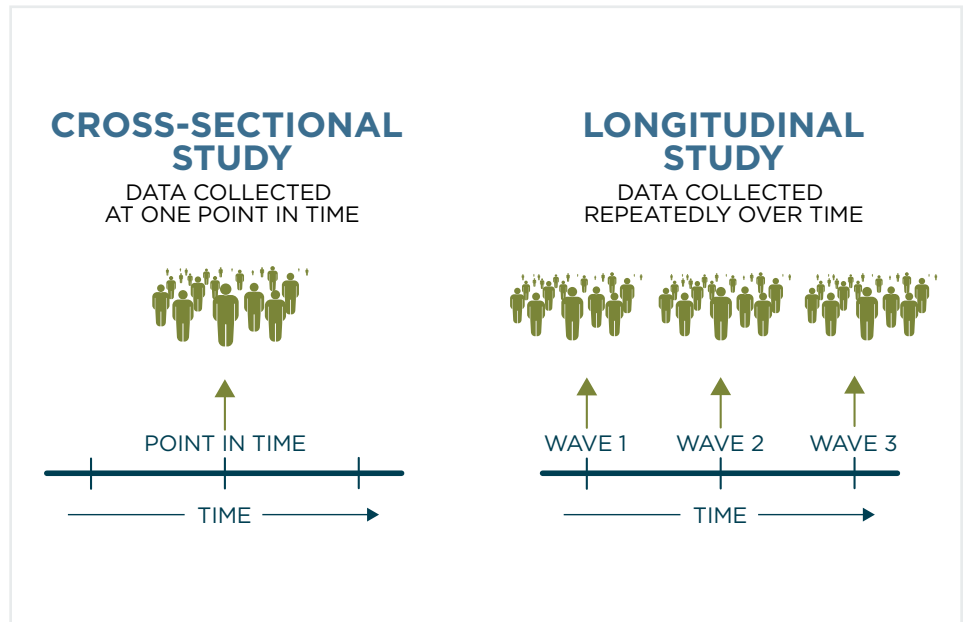
- **Toxic exposures**
- **Women's health**
- **VA health care**
- **Suicide risk** *measured by the Columbia-Suicide Severity Rating Scale*
- **Food insecurity** *measured by the USDA Household Food Security Survey Module (six-item short form)*
- **Emotional and instrumental support** *measured by the NIH Toolbox (emotional and instrumental support)*
- **Anxiety** *measured by the General Anxiety Disorder 7-Item Scale*
- **Barriers to mental health care** *measured by the Barriers to Access to Care Evaluation*
- **Postconcussive symptoms** *measured by the Neurobehavioral Symptom Inventory*
- **Traumatic brain injury (TBI)** *measured by the VA TBI Screening Tool*
- **Drug abuse** *measured by the Drug Abuse Screening Test*
- **Chronic pain** *measured by the Chronic Pain Grade Scale*
- **Professional fulfillment** *measured by the Stanford Professional Fulfillment Index Scale*

CHANGE IN STUDY DESIGN – LONGITUDINAL METHODOLOGY

The thorough review and revision process also resulted in a decision to transition the Annual Warrior Survey from a cross-sectional census to a longitudinal sample survey in 2021. A notable difference for warriors is that now, as a longitudinal survey, the Annual Warrior Survey will only be sent to a preselected portion of the warrior population. This group is scientifically selected to ensure the survey sample is representative of the entire WWP warrior population. Prior to 2021, the cross-sectional census design called on all warriors to participate.



The primary advantage of a longitudinal design over a cross-sectional design is that it allows WWP to observe changes in the same cohort of individuals over time. This makes it possible for WWP to predict, with greater accuracy, how aging and particular life events affect warriors.



WARRIOR ENGAGEMENT IN SURVEY DESIGN

Cognitive interviewing is considered best practice and a critical part of testing a survey before fielding it. Cognitive interviews assess respondents' understanding of the survey questions and examine their ability to remember relevant information, decision processes involved in answering a question, and the appropriateness of response categories. Given the vast changes to the 2021 survey, NORC performed cognitive interviews with 10 WWP warriors to ensure a positive experience and the quality of responses.

NEW WAYS TO PARTICIPATE

In line with WWP's efforts to evolve with warriors' needs, NORC and WWP developed a paper-and-pencil questionnaire for the 2021 survey. This ensured that warriors whose injuries may prevent them from completing an online survey or warriors who are without access to a computer or internet could participate, thereby improving the representativeness of the sample.

HOW TO INTERPRET THIS REPORT

WHO IT REPRESENTS: WWP WARRIORS



Results from the survey represent veterans and service members registered with WWP, referred to in this report as “warriors” or “WWP warriors.” Veterans and service members registered with WWP served in the military on or after Sept. 11, 2001, and incurred a mental or physical injury, illness, or wound as a result of their service.

COMPARATIVE DATA POPULATIONS

To provide context for the information presented, comparisons between the WWP warrior population and these three other populations will be made throughout the report:



The U.S. veteran population: the broader U.S. adult population who were veterans of the U.S. armed forces, as reported by the 2019 U.S. census



The U.S. post-9/11 veteran population: U.S. veterans who served after September 2001, as reported by the 2019 U.S. census



The U.S. general population: U.S. adults, aged 18 years or older, as reported by the 2019 U.S. census

Comparisons with these populations are included when comparative data is relevant and available. Some comparisons in the report may only include specific populations due to availability of data.

CALLOUT BOXES



The callout boxes provide additional information to aid readers in understanding the content of this report.

APPENDIX

The Appendix is found at the end of the report and provides detailed supplemental information on topics such as methodology, weighting, and survey communications.

A black and white photograph of a man with a mustache and sunglasses, wearing a t-shirt and holding a cane. He is standing on a pier with a long bridge in the background. The image has a blue tint. A dark teal horizontal bar is overlaid on the right side of the image, containing the word "DEMOGRAPHICS" in white, bold, sans-serif capital letters.

DEMOGRAPHICS

WOUNDED WARRIOR
AARON CORNELIUS

» DEMOGRAPHICS


Demographics describe the core of who WWP warriors are. These are the key characteristics, like age, race, and sex, that can affect many factors in their lives, including health outcomes and overall quality of life. This section also compares WWP warrior demographics with demographics of the broader U.S. veteran population, post-9/11 veteran population, and U.S. general population, which provides context in the overall picture of warrior wellness.

AGE

Aging is a key characteristic in defining generational cohorts, and understanding age provides context on the unique experiences and needs of warriors as they transition through different life phases. WWP studies age-specific insights to ensure our services and programs evolve to be responsive to the needs that come with aging.

The effects of aging can be especially challenging for someone who is injured or ill. Research has shown that older age and physical injuries or disabilities come with a greater risk of reduced functional ability (the ability to carry on normal life activities) and increased risk for further injury or illness. This can lead to loss of independence and lower health-related quality of life.^{1,2} This makes age a particularly important characteristic in the WWP warrior population, given the high prevalence of injuries.

The 2021 survey found the average age of WWP warriors to be 42 years, with little difference in average age between female (41 years) and male (42 years) warriors. The largest subset of WWP warriors are 35 years and older (82.7%). When comparing average age, WWP warriors are older compared to the U.S. post-9/11 veteran population (37 years) and younger than all U.S. veterans (60 years) and U.S. adults (48 years).

 *Age does not simply represent a point in time — it represents the growing risk for additional challenges. Tracking the age of the warrior population allows WWP to be proactive and prepare for these additional challenges that may come as warriors grow older.*

AVERAGE AGE (YEARS)

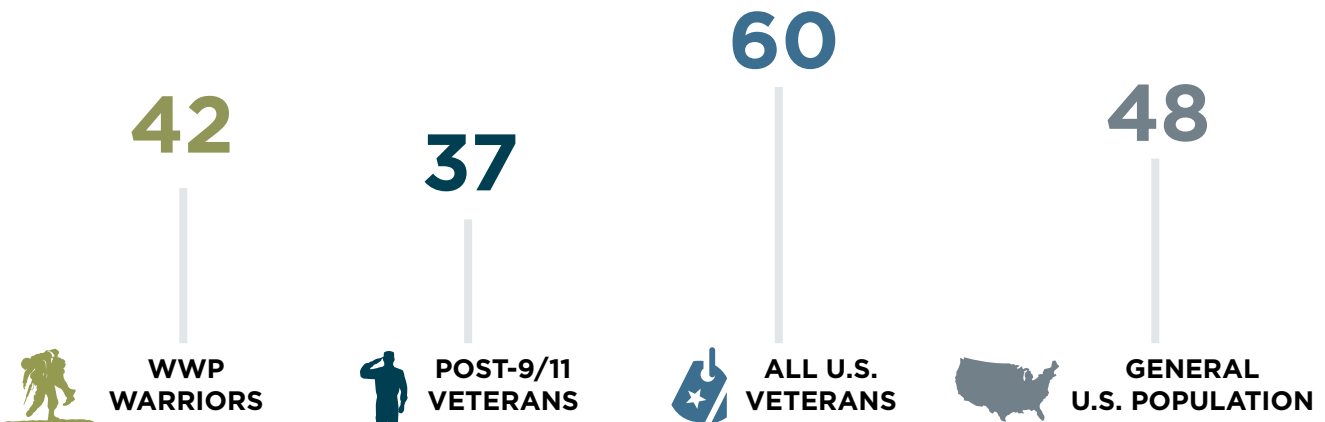
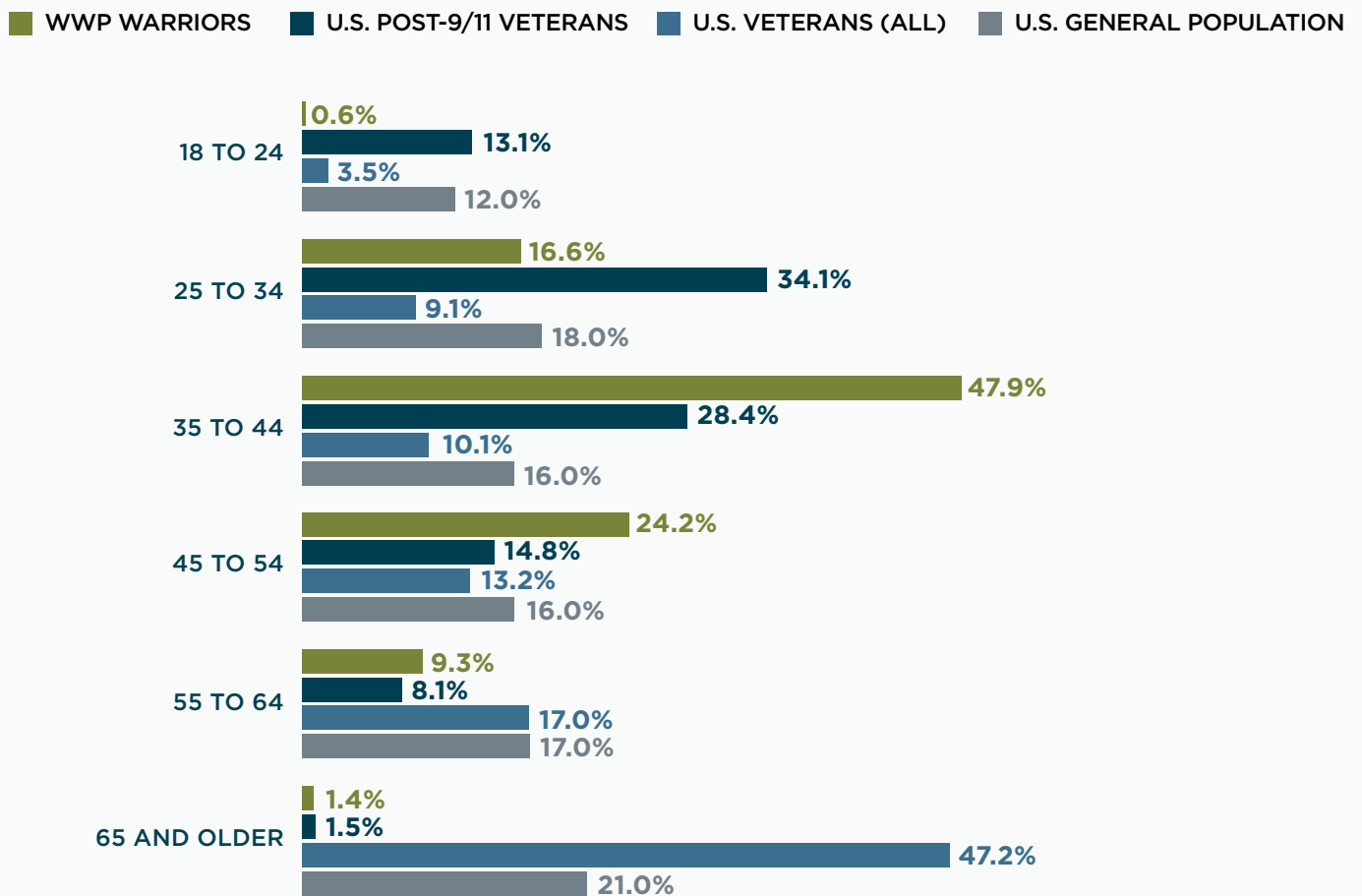


FIGURE 1. AGE GROUPS: COMPARISON OF WWP WARRIORS AND U.S. POPULATIONS

Age in years



Data Source: Wounded Warrior Project³ and U.S. Census Bureau.⁴

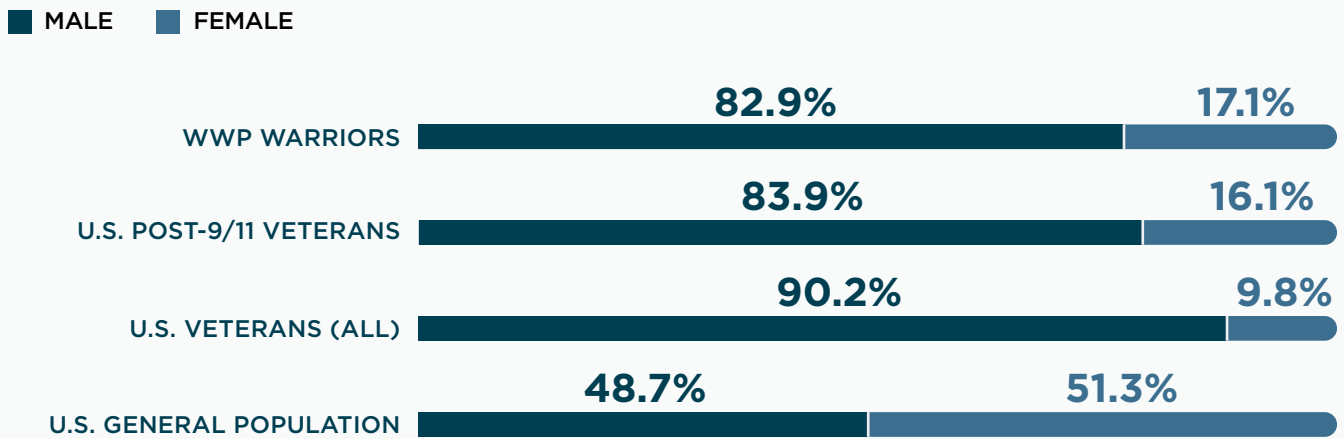
SEX

In the 2021 survey, 82.9% of WWP warriors reported their sex as male; 17.1% reported as female. When compared with the sex breakdown of other populations, the WWP warrior population is most similar to the U.S. post-9/11 veteran population, which is made up of 83.9% males and 16.1% females. The overall U.S. veteran population has a greater proportion of males (90.2%), and the general U.S. adult population is most evenly distributed, with 48.7% male and 51.3% female.

Female participation in the military continues to rise, with a growing female population among veterans. From 2000 to 2019, the number of female active-duty members increased by 12.1%, and female Selected Reserve members increased by 14.9%.⁵ Of WWP warriors who completed the 2021 Annual Warrior Survey, 17.1% were female — a larger representation when compared with the overall U.S. veteran population and similar to the U.S. post-9/11 veteran population.

FIGURE 2. SEX: COMPARISON OF WWP WARRIORS AND U.S. POPULATIONS

WWP warriors, U.S. post-9/11 veterans, U.S. veterans (all), and U.S. general population.



Data Source: Wounded Warrior Project³ and U.S. Census Bureau.⁴

RACE AND ETHNICITY

Together, race and ethnicity represent an individual's social, cultural, and behavioral practices⁶ and are grouped as demographic characteristics to describe and understand individual and community attributes.^{7,8} Race is self-reported and can represent an individual's social, cultural, political, and economic experiences.⁶ Ethnicity, while often used interchangeably with race, actually represents the collective common ancestry among individuals, including language, diet, religion, and social norms.⁶



TABLE 1. RACE: COMPARISON OF WWP WARRIORS AND U.S. POPULATIONS

WWP warriors, U.S. post-9/11 veterans, U.S. veterans (all), and U.S. general population.

RACE	WWP WARRIORS	U.S. POST-9/11 VETERANS	U.S. VETERANS (ALL)	U.S. GENERAL POPULATION
WHITE	64.1%	73.1%	80.8%	73.6%
BLACK OR AFRICAN AMERICAN	15.1%	15.7%	12.5%	12.5%
AMERICAN INDIAN/ALASKAN NATIVE	1.3%	0.9%	0.8%	0.8%
ASIAN	2.2%	3.2%	1.9%	5.9%
NATIVE HAWAIIAN/PACIFIC ISLANDER	1.1%	0.4%	0.2%	0.2%
OTHER	8.5%	2.7%	1.5%	4.5%
TWO OR MORE RACES	7.7%	4.1%	2.3%	2.5%

*Data Source: Wounded Warrior Project³ and U.S. Census Bureau.⁴***TABLE 2. ETHNICITY: COMPARISON OF WWP WARRIORS AND U.S. POPULATIONS**

WWP warriors, U.S. post-9/11 veterans, U.S. veterans (all), and U.S. general population.

ETHNICITY	WWP WARRIORS	U.S. POST-9/11 VETERANS	U.S. VETERANS (ALL)	U.S. GENERAL POPULATION
MEXICAN, MEXICAN AMERICAN, CHICANO/A	9.0%	7.6%	4.4%	9.8%
PUERTO RICAN	5.3%	2.5%	1.4%	1.6%
CUBAN	0.7%	0.5%	0.3%	0.7%
OTHER HISPANIC, LATINO/A, OR SPANISH ORIGIN	6.5%	3.2%	1.7%	4.3%
NOT OF HISPANIC, LATINO/A, OR SPANISH ORIGIN	78.5%	86.3%	92.2%	83.6%

*Note: Hispanic origin is considered an ethnicity, not a race. The population that is Hispanic may be of any race.**Data Source: Wounded Warrior Project³ and U.S. Census Bureau.⁴*

SEXUAL ORIENTATION

The American Psychological Association defines sexual orientation as “who an individual is attracted to, categorized as same sex (gay men or lesbian), heterosexual when attracted to individuals of the opposite sex, and bisexual when attracted to individuals of both sexes”.⁹ Collection of sexual orientation data provides more context for the experiences and unique needs of WWP warriors as it relates to their personal relationships and close social networks.

Among WWP warriors, 5.4% identified as LGBTQ compared with 6% of the U.S. general adult population. About 94.6% of WWP warriors described themselves as straight/heterosexual; 2.2% as lesbian or gay; 2.2% as bisexual; and less than 1% as queer, pansexual, and/or questioning (0.6%).

TABLE 3. SEXUAL ORIENTATION: COMPARISON OF WWP WARRIORS AND U.S. ADULTS
 WWP warriors, U.S. post-9/11 veterans, U.S. veterans (all), and U.S. general population.

SEXUAL ORIENTATION	WWP WARRIORS	U.S. GENERAL POPULATION
STRAIGHT/HETEROSEXUAL	94.6%	86.7%
LESBIAN OR GAY	2.2%	2.1%
BISEXUAL	2.2%	3.1%
QUEER, PANSEXUAL, AND/OR QUESTIONING	0.6%	0.2%
SOMETHING ELSE	0.4%	--
TRANSGENDER	--	0.6%

Note: The U.S. general population percentage does not add up to 100% because 7.6% did not answer.

Data Source: Wounded Warrior Project⁸ and Jones.¹⁰

MARITAL STATUS

While this report does not directly examine the needs of the military family, marital status can provide additional context for understanding warriors' households, dependents, and social resources. This also helps WWP better understand the prevalence of military spouses and military children and the potential subsequent needs of those individuals connected to warriors.



WWP understands the importance of a strong support system and is here to serve those who support the transition and recovery of their wounded, ill, or injured family members. WWP programs and services are built to reduce the burden of visible and invisible wounds on the lives of warriors as well as the families who support them.

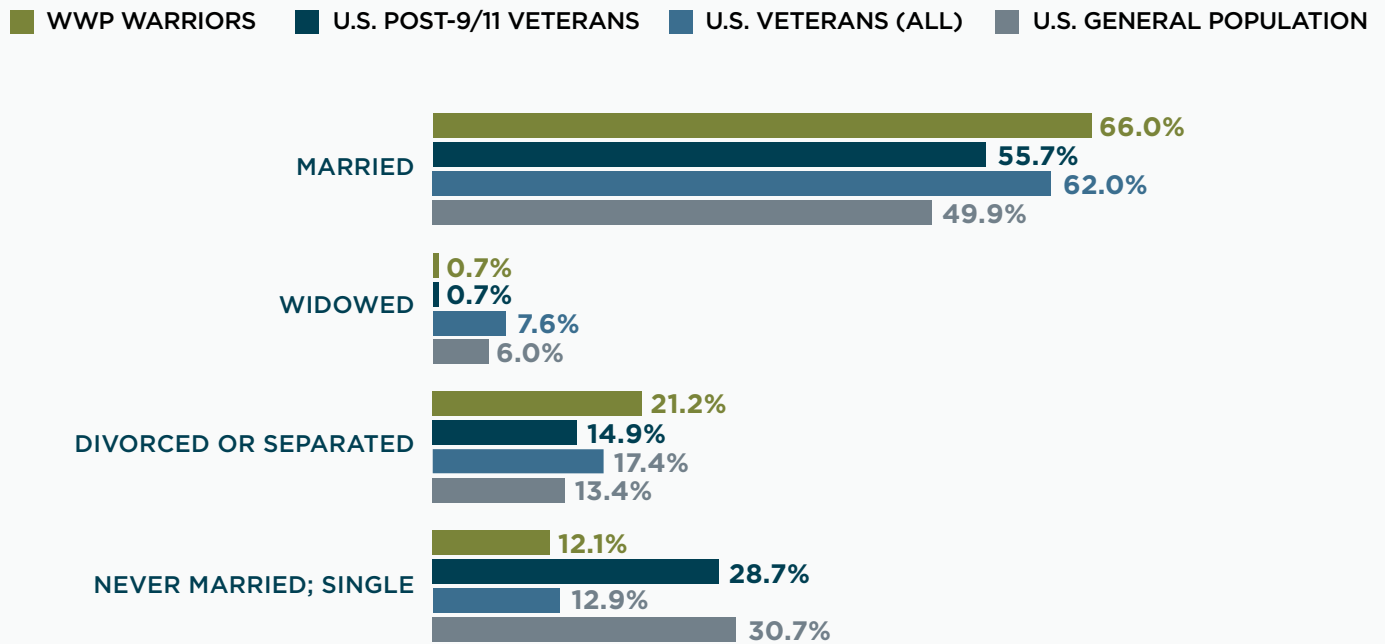
Studies have shown that individuals who are married are more likely to report better health and have a lower mortality risk than their non-married peers.^{11, 12} Conversely, research has shown that divorce or separation can be associated with instability, adverse mental health outcomes, and high-risk behaviors.^{11, 12}

When comparing across all population groups, WWP warriors were least likely to report never married or single (12.1%), with most indicating they are married (66%), followed by divorced or separated (21.2%).



More than 3 in 5 WWP warriors are married.

FIGURE 3. MARITAL STATUS: COMPARISON OF WWP WARRIORS AND U.S. POPULATIONS



Data Source: Wounded Warrior Project³ and U.S. Census Bureau.⁴

MARITAL STATUS BY WARRIOR SEX

Differences in marital status were also observed based on warrior sex. Females were significantly more likely than males to be divorced or separated (31.9% vs. 19%), widowed (1.6% vs. 0.5%), or never married or single (20.6% vs. 10.4%) and were less likely to be married (45.9% vs. 70.1%).*

* A chi-square test of independence was performed to examine the relation between sex and marital status. When comparing female with male warriors, the relationship was significant ($\chi^2 = 1152.5, p < .0001$).

EDUCATION

Education is an important demographic factor to track in terms of warrior well-being as well. Studies have shown that people's health can be affected by their earnings, which typically grow with education attainment.^{13,14} Educational goals may be pursued by warriors before, during, or after their active-duty experiences. As WWP looks to support warriors through each step in their journeys, it's important to understand their efforts in pursuing higher education.

HIGHEST LEVEL OF EDUCATION COMPLETED

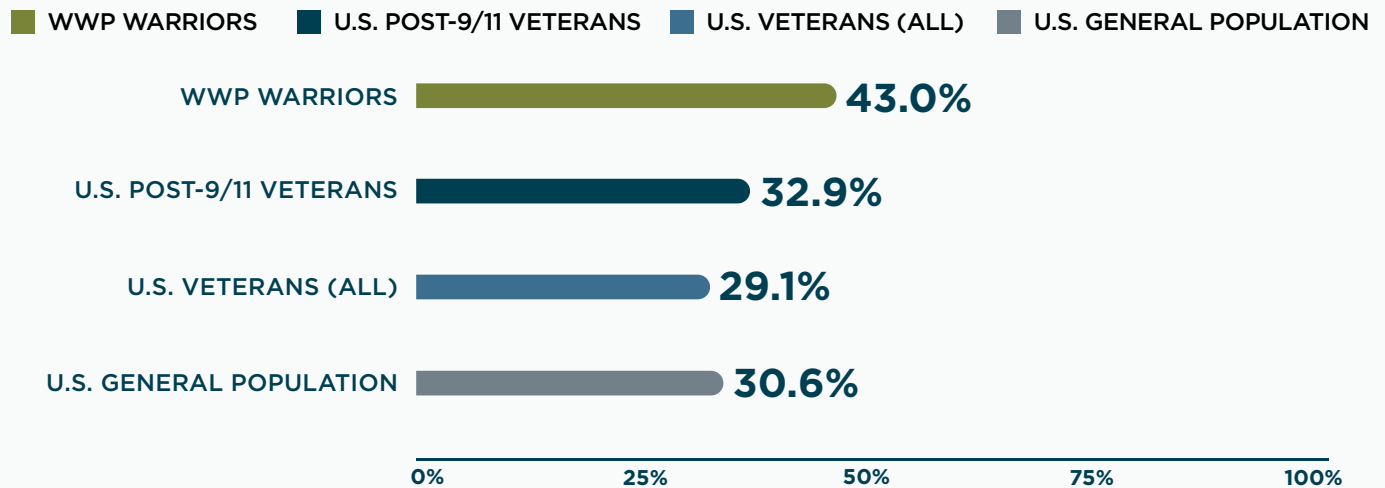
With 43% having obtained a bachelor's degree or higher, WWP warriors tend to be more educated when compared across three veteran population groups and the U.S. adult population (Figure 4).

.....

More than 2 in 5 WWP warriors have a bachelor's degree or higher.

.....

FIGURE 4. EDUCATION ATTAINMENT: BACHELOR'S DEGREE OR HIGHER, COMPARISON OF WWP WARRIORS AND U.S. POPULATIONS



Data Source: Wounded Warrior Project³ and U.S. Census Bureau.⁴

TABLE 4. HIGHEST EDUCATION ATTAINED: COMPARISON OF WWP WARRIORS AND U.S. POPULATIONS

WWP warriors, U.S. post-9/11 veterans, U.S. veterans (all), and U.S. general population.

HIGHEST EDUCATION ATTAINED	WWP WARRIORS	U.S. POST-9/11 VETERANS	U.S. VETERANS (ALL)	U.S. GENERAL POPULATION
LESS THAN HIGH SCHOOL DIPLOMA/GED	0.3%	1.9%	5.0%	11.4%
HIGH SCHOOL DIPLOMA/GED	8.7%	21.9%	27.9%	27.6%
SOME COLLEGE OR ASSOCIATE DEGREE	47.9%	43.3%	38.0%	30.4%
BACHELOR'S DEGREE	26.6%	19.9%	17.1%	19.3%
MASTER'S DEGREE	14.9%	10.4%	8.6%	8.1%
PROFESSIONAL OR DOCTORATE DEGREE	1.5%	2.6%	3.4%	3.2%

Data Source: Wounded Warrior Project³ and U.S. Census Bureau.⁴

WARRIORS PURSUING FURTHER EDUCATION

Of all WWP warriors, 14.8% reported they are currently enrolled part time or full time as a student at a college or university or at a business, technical, or vocational school. Of those, 26% were working toward an associate, 41% bachelor's, 23.9% master's, and 6.9% doctorate or professional degree. As noted previously, education can impact warrior well-being, as it is an indirect means of support and positively impacts health through increased employment opportunities and financial earnings.¹⁴

HOUSEHOLD CHARACTERISTICS

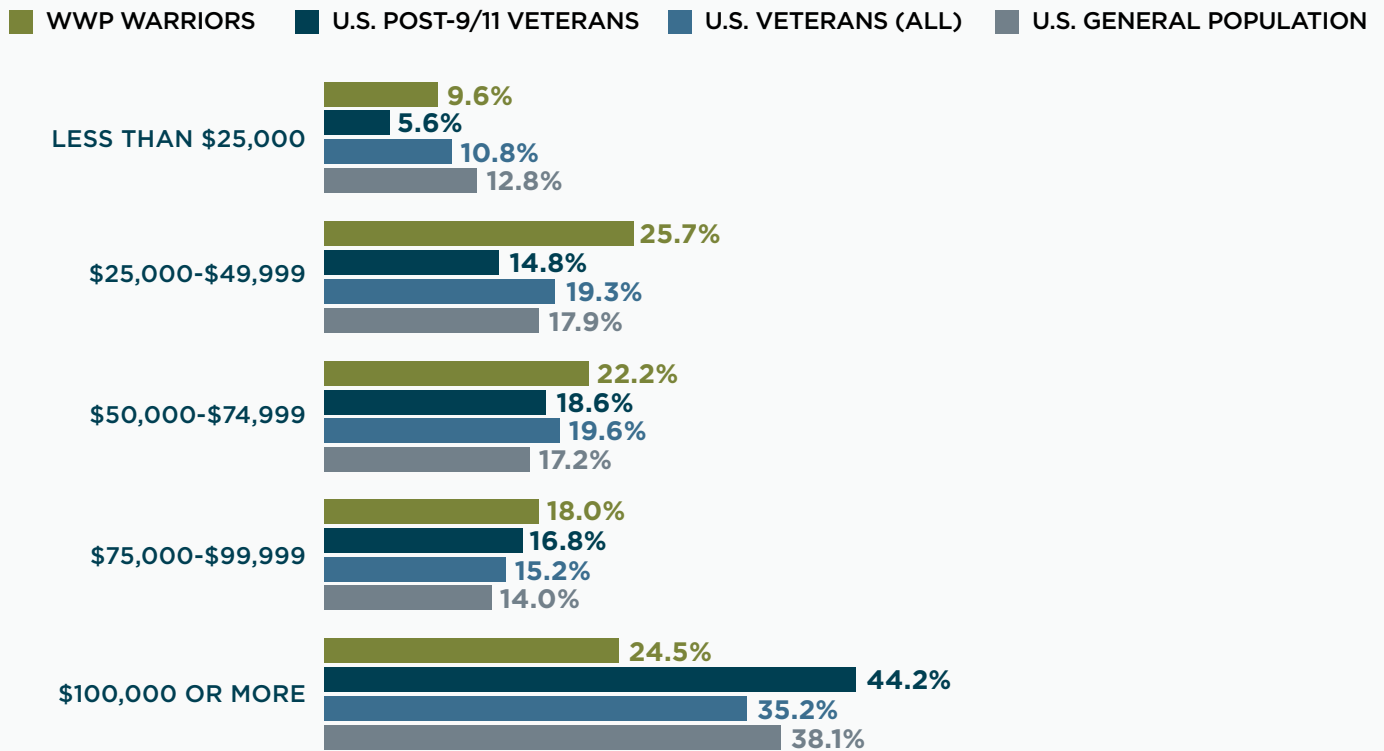
Household characteristics help paint a clearer picture of a warrior's home life, the resources at the warrior's disposal, and the number and types of resources necessary to meet essential needs. The number of people in each household impacts the poverty threshold, which is the minimum income required to cover basic needs.¹⁵ The presence of children within a household further influences the need for additional resources, such as child care and additional income, to cover added child-related expenses.

HOUSEHOLD INCOME

Tracking warriors' household income and comparing it with that of other populations allows WWP to understand whether warriors have sufficient income to meet their basic needs (e.g., ability to pay household bills or meet monthly expenses). Household income includes all income earned in the household, such as wages, business and investment income, Social Security, retirement income, unemployment payments, disability back pay, public assistance, and so forth.

The median-range household income reported by WWP warriors was \$50,000 to \$74,999. That income range encompasses the median income of \$68,703 for the U.S. general population.¹⁶

FIGURE 5. INCOME: COMPARISON OF WWP WARRIORS AND U.S. POPULATIONS



Note: Warrior household income data was collected in categories, precluding calculation of an exact median value.

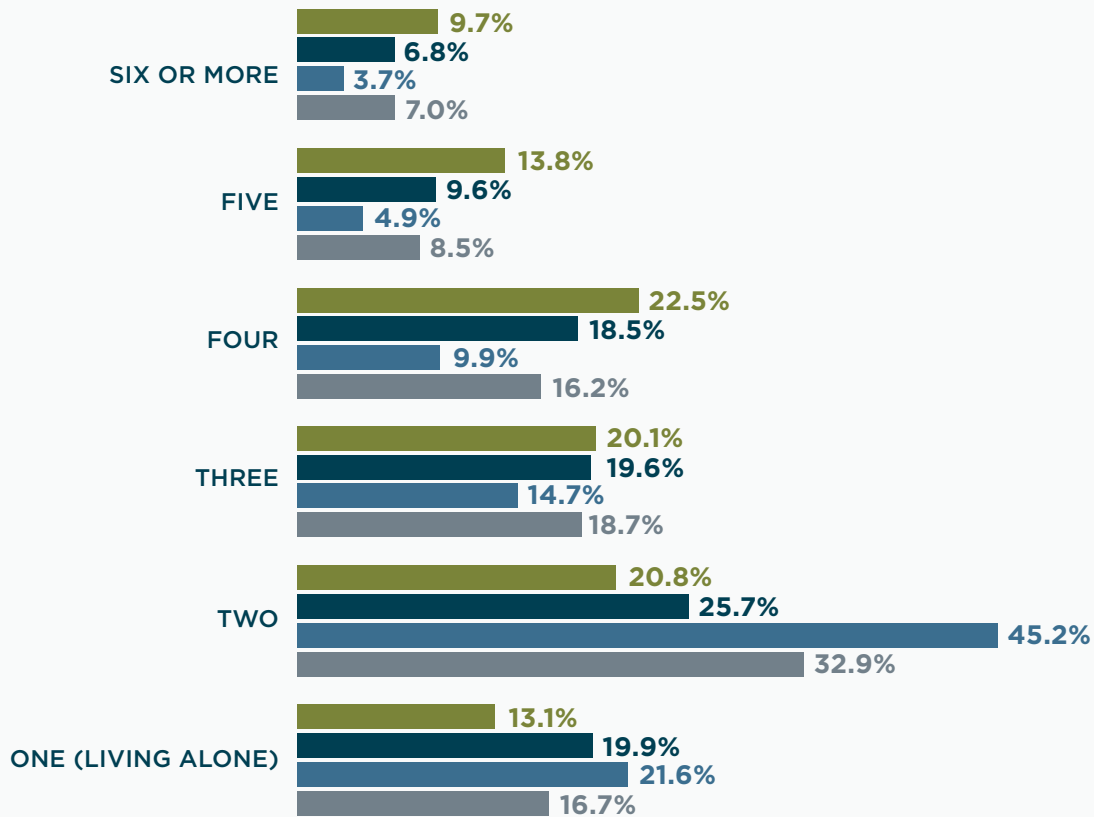
Data Source: Wounded Warrior Project³ and U.S. Census Bureau.⁴

HOUSEHOLD SIZE

Household size is determined by the total number of adults and children (age 17 or younger), including the warrior, reported living in the household. On average, WWP warriors have a household size of three. When comparing across all populations, WWP warriors are least likely to live alone. In terms of household size, WWP warriors tend to have more individuals living in the household, with 46% having a household size of four or more, compared with all veterans (18.5%), post-9/11 veterans (34.9%), and U.S. adults (31.7%) (Figure 6).

FIGURE 6. HOUSEHOLD SIZE: COMPARISON OF WWP WARRIORS AND U.S. POPULATION

■ WWP WARRIORS ■ U.S. POST-9/11 VETERANS ■ U.S. VETERANS (ALL) ■ U.S. GENERAL POPULATION



Data Source: Wounded Warrior Project³ and U.S. Census Bureau.⁴

NUMBER OF CHILDREN

About three in five WWP warriors have at least one child living within the household (60%). Of those with children in the household, the average number of children was two, and 22.7% were single-parent households.

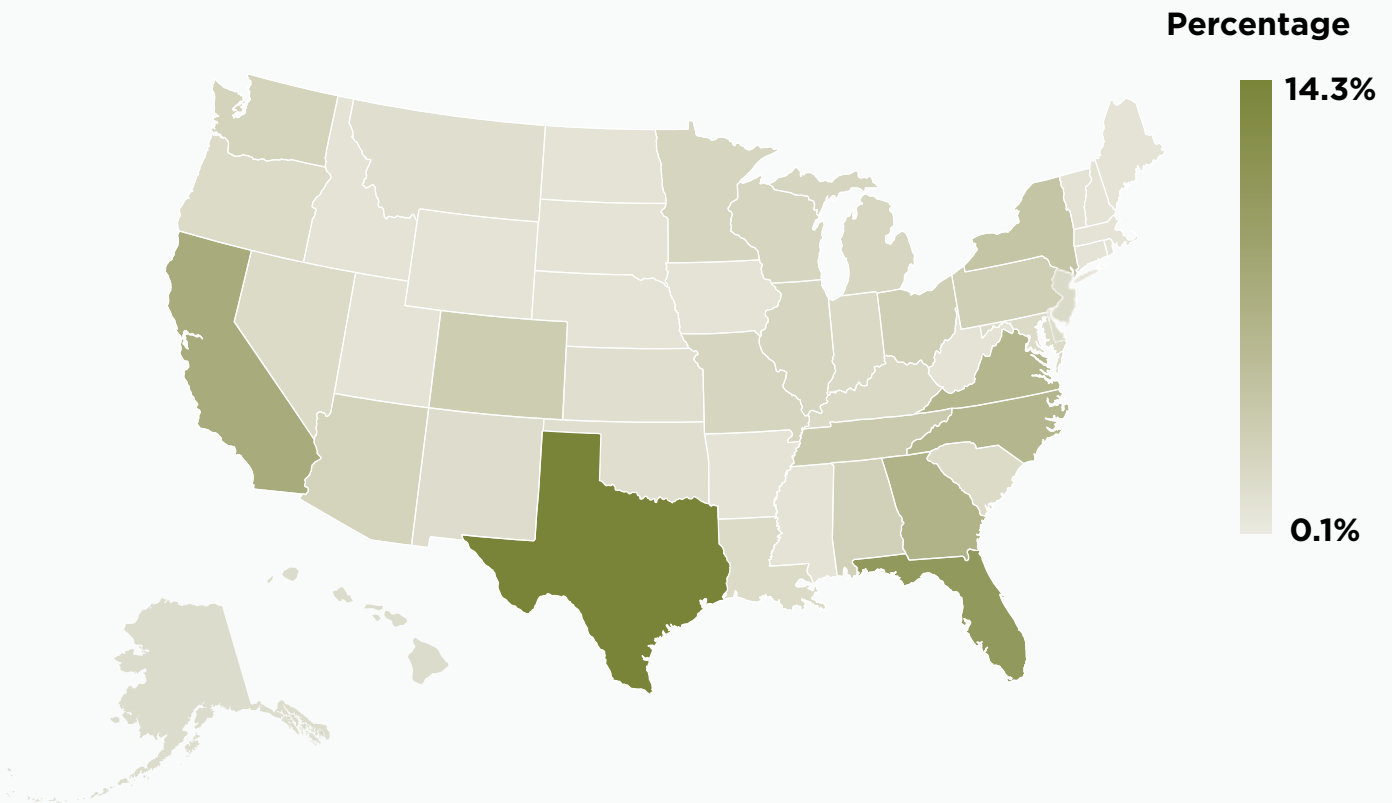
WWP warriors are more likely to have at least one child living within the household compared with post-9/11 veterans (47.8%), all veterans (21.2%), and U.S. adults (34.1%).

GEOGRAPHIC LOCATION

WWP serves warriors across all U.S. states — Texas has the highest number of warriors registered with WWP (19,496), followed by Florida (13,629), and California (10,230).

FIGURE 7. GEOGRAPHIC LOCATION: WWP WARRIORS

Where WWP warriors are located.



STATE	PERCENT	STATE	PERCENT
TEXAS	14.3%	GEORGIA	4.7%
FLORIDA	10.0%	COLORADO	3.8%
CALIFORNIA	7.5%	WASHINGTON	2.9%
NORTH CAROLINA	5.5%	TENNESSEE	2.8%
VIRGINIA	4.7%	ARIZONA	2.7%

URBANICITY

In addition to the geographic distribution of WWP warriors, we examined residential settings through urbanicity — whether the regions they are located in are classified as urban or rural.* Understanding urbanicity provides valuable context on the differences in environmental, economic, and social experiences of warriors living in urban versus rural settings.



Currently,
5.2% of WWP
warriors **live**
in rural areas.

When examining differences among WWP warriors who live in rural areas compared with those in urban areas, notable differences emerged in labor force participation and weekly wages. When compared with warriors living in urban areas, warriors who live in rural areas earned an average of \$100 less in weekly wages, were less likely to be in the labor force, and were more likely to report financial strain (defined as not having enough money to make ends meet, such as to pay for rent/mortgage, food, utilities, phone, or other basic needs) (Table 5).

TABLE 5. URBANICITY: COMPARISON OF WWP WARRIORS IN URBAN AND RURAL AREAS

Differences in labor force participation, full- and part-time weekly wages.

FACTOR	RURAL	URBAN
IN THE LABOR FORCE	50.1%	59.2%

EMPLOYMENT STATUS	WEEKLY WAGE (MEDIAN)	
	RURAL	URBAN
EMPLOYED FULL TIME	\$900	\$1,000
EMPLOYED PART TIME	\$200	\$300

*Rural is based on the rural-urban commuting area codes that classify U.S. census tracts using measures of population density, urbanization, and daily commuting. Those codes are used to delineate metropolitan, micropolitan, small-town, and rural commuting areas based on the size and direction of the primary (largest) commuting flows.



MILITARY EXPERIENCE

WOUNDED WARRIOR
BRIAN SELLERS



MILITARY EXPERIENCE

For the brave men and women who've served, military service is a rewarding experience and a point of pride. Their service to our country, however, is not without sacrifice. The events and experiences during service can lead to complex and varied conditions for a significant portion of veterans. Understanding warriors' experiences during their service lends greater understanding to the different impacts of service on their physical, psychological, social, and emotional well-being today.

CURRENT MILITARY STATUS

Warriors fall into three distinct statuses:

- **Active duty:** Service members who are employed full time, ready to serve, and can be deployed when necessary.¹⁷
- **Reserve:** Consists of two organizations — Reserve and National Guard. Individuals who serve in the Reserve or National Guard are not full-time active-duty military. Each of the branches maintains trained units and qualified individuals to be available to transition into active duty if or when needed.¹⁷
- **Veteran:** Any individual who has served in the military and who was discharged under terms other than dishonorable discharge.¹⁸

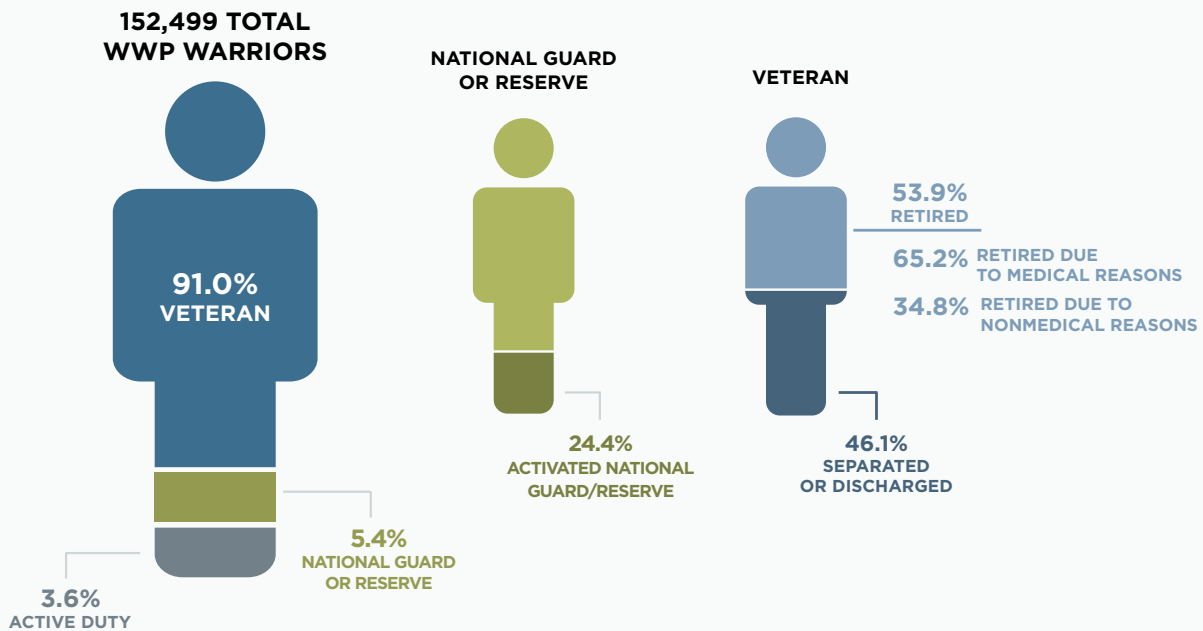
.....

More than 9 in 10
WWP warriors are veterans
and have been **out of the**
service for an average of
nine years.

.....

FIGURE 8. CURRENT MILITARY STATUS: WWP WARRIORS

Breakdown of current military statuses of WWP warriors.



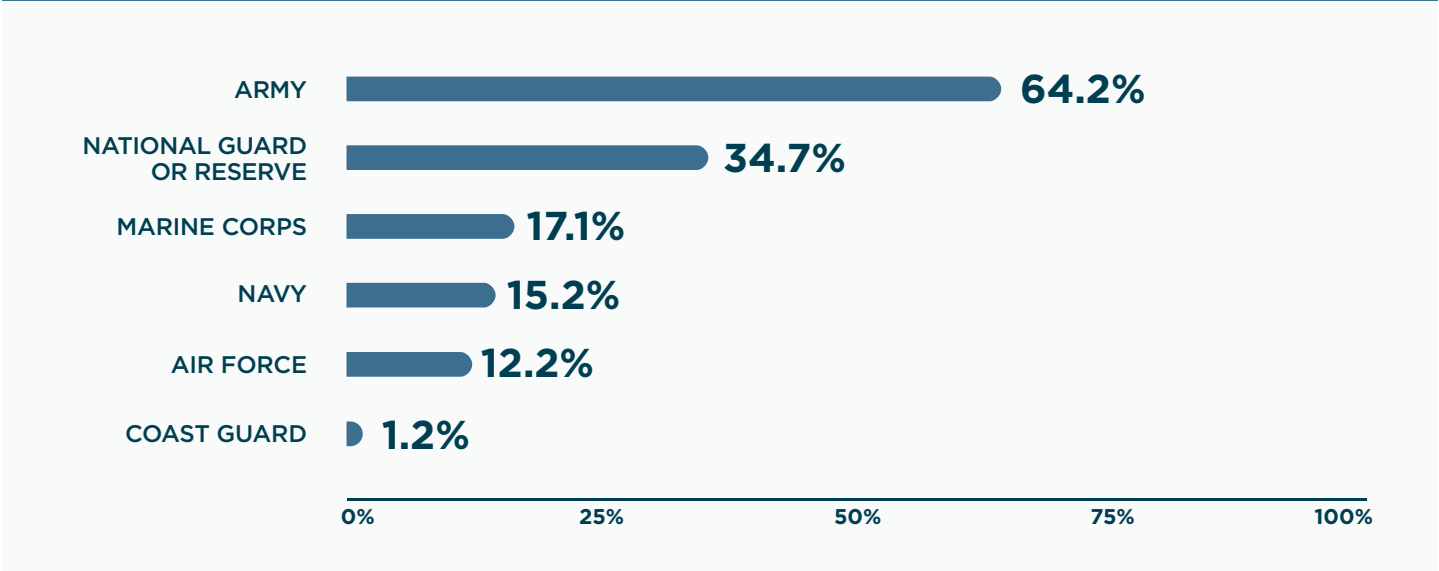
BRANCH OF SERVICE

Most WWP warriors reported having served in the Army (64.2%), followed by the National Guard or Reserve (34.7%), Marine Corps (17.1%), Navy (15.2%), Air Force (12.2%), and Coast Guard (1.2%).



More than one-third of WWP warriors **have served in multiple branches** of the military.

FIGURE 9. BRANCH OF SERVICE: WWP WARRIORS
Breakdown of branches of service WWP warriors have ever served in.



Note: The survey question advised warriors to "select all" in response to the branch(es) of service ever served. Percentages do not total 100%, as warriors were asked to choose all that apply.

DEPLOYMENT HISTORY

The survey asked warriors about deployments, defined as "any military work assignment that sends you away from your home base/station, including deployment to a combat area, noncombat area, or training mission."



More than 9 in 10 WWP warriors (93.1%) have deployed at least one time.

Among those who have deployed:

- The average number of deployments is four
- 91.5% have deployed to a combat zone

DEPLOYMENTS BY BRANCH OF MILITARY

The likelihood among WWP warriors to have deployed was about the same across all branches of the military. All branches were also similar in terms of deployments to combat zones, except for the Coast Guard. Warriors who served in the Coast Guard were about three times less likely to have deployed to a combat area (27.6%) than warriors who served in any other branch (82.9%-93.5%).

DEPLOYMENTS BY WARRIOR SEX

Male WWP warriors were more likely to report at least one deployment (95.4%) and deployment to a combat area (93%) in comparison with female warriors (82% and 82.2%, respectively).



WWP warriors served after Sept. 11, 2001, and in its related conflicts: Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and Operation New Dawn (OND). These conflicts have been the largest and longest-lasting mobilizations of the Reserve and National Guard since the Korean War.¹⁷

PAY GRADE/RANK

To assess military rank, WWP warriors were asked their highest military pay grades. The majority of warriors were enlisted (90.4%), with the remaining proportion consisting of warrant officers and officers (9.6%). The largest proportion of enlisted warriors were midgrade enlisted at 43.2% (E5 to E6), followed by junior enlisted at 29.7% (E1 to E4) and senior enlisted at 17.6% (E7 to E9).

TABLE 6. MILITARY PAY GRADE: WWP WARRIORS

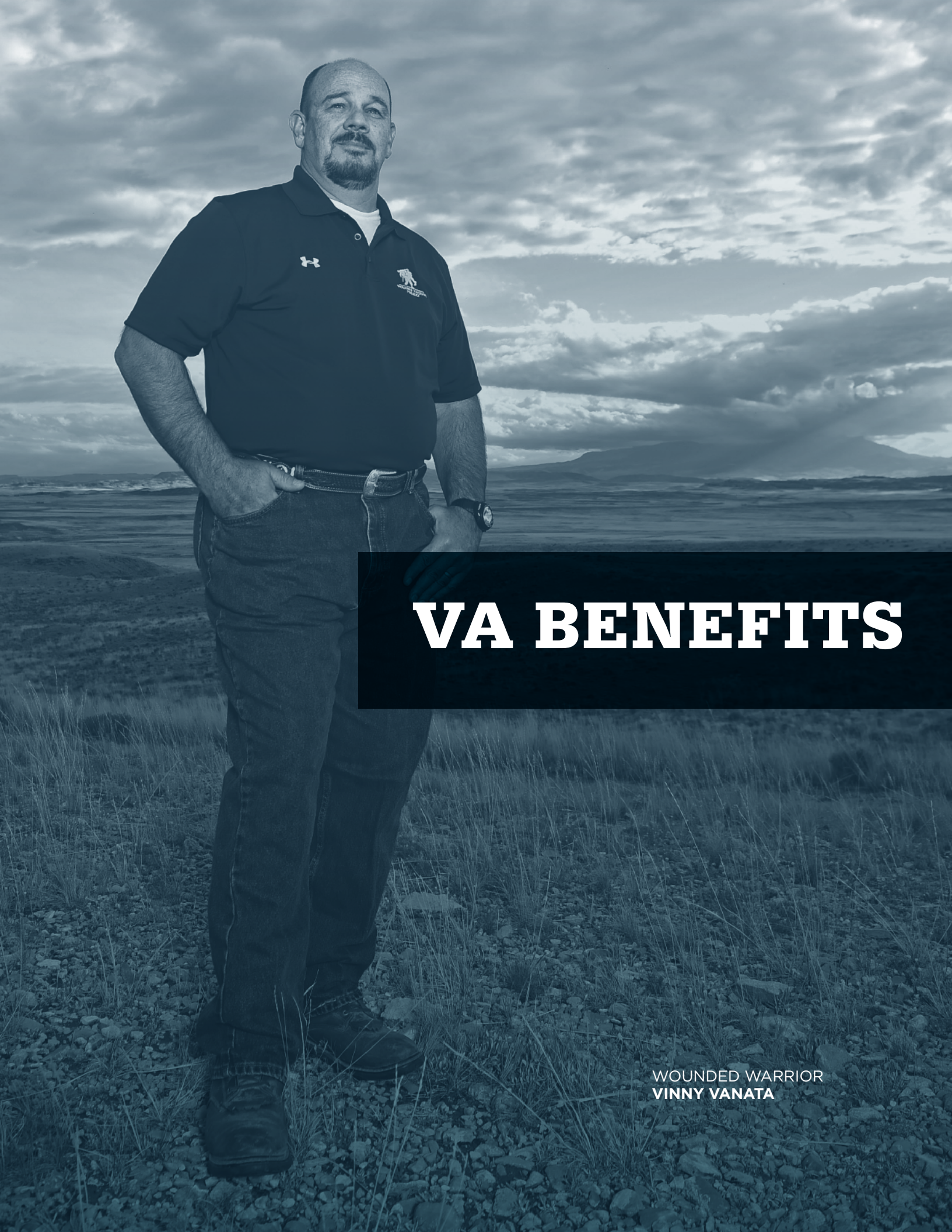
Breakdown of highest military pay grades among WWP warriors.

PAY GRADE	PERCENT
E1-E4 (JUNIOR ENLISTED)	29.7%
E5-E6 (MIDGRADE ENLISTED)	43.2%
E7-E9 (SENIOR ENLISTED)	17.5%
W1-W5 (WARRANT OFFICERS)	1.5%
O1-O3 (JUNIOR OFFICERS)	3.4%
O4-O10 (SENIOR OFFICERS)	4.7%

TABLE 7. MILITARY PAY GRADE: COMPARISON OF MALE AND FEMALE WWP WARRIORS

Breakdown, by sex, of highest military pay grades among WWP warriors.

PAY GRADE	MALE	FEMALE
E1-E4 (JUNIOR ENLISTED)	28.5%	35.3%
E5-E6 (MIDGRADE ENLISTED)	43.9%	39.8%
E7-E9 (SENIOR ENLISTED)	18.5%	13.1%
W1-W5 (WARRANT OFFICERS)	1.7%	1.0%
O1-O3 (JUNIOR OFFICERS)	3.0%	5.1%
O4-O10 (SENIOR OFFICERS)	4.5%	5.7%



VA BENEFITS

WOUNDED WARRIOR
VINNY VANATA

VA BENEFITS

VA military benefits in the form of education assistance and veteran disability compensation provide support and opportunities to obtain further education and/or the income essential to support veterans whose ability for gainful employment has been reduced by one or more service-connected injuries.^{19, 20}

Understanding utilization of VA benefits among the WWP warrior population helps inform WWP of the ways in which it can assist warriors in obtaining the benefits they've earned. This also guides WWP's efforts to augment and fill gaps in benefits and services available to warriors.

EDUCATION BENEFITS

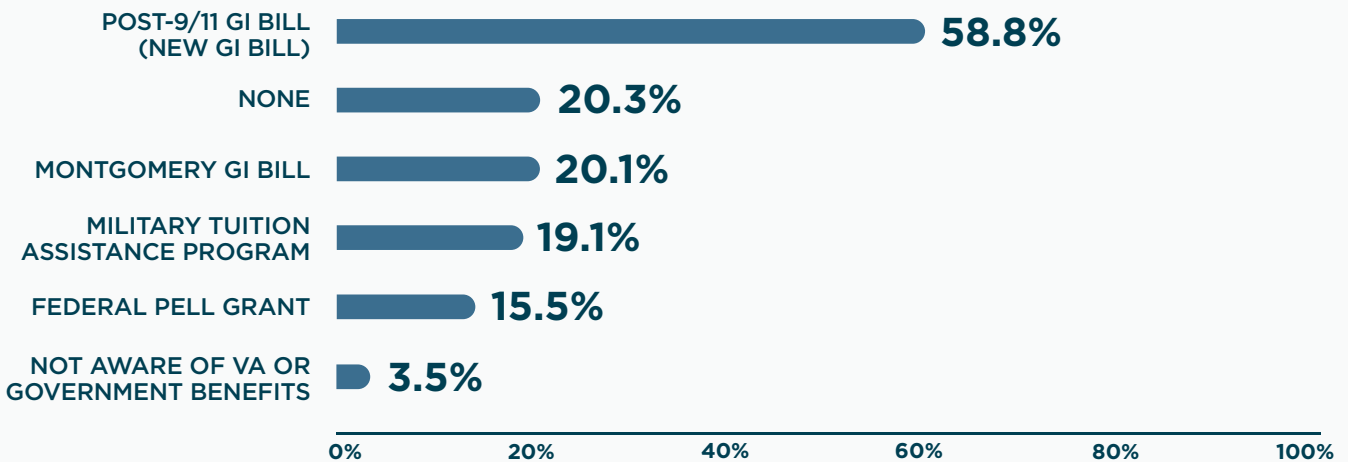
It is estimated that tuition rates increase about 8% per year, twice the rate of inflation, and will double over a nine-year period.²¹ Education assistance programs, such as the Post-9/11 GI Bill, are available to veterans to help offset the rising costs of education.

About seven in 10 WWP warriors reported using at least one type of education benefit (71.1%). The most common education benefit utilized by warriors is the Post-9/11 GI Bill, which provides financial assistance for school or job training for those who served on active duty after Sept. 10, 2001.

Nearly 3 in 5
WWP warriors have used
or are currently using the
Post-9/11 GI Bill.

FIGURE 10. EDUCATION BENEFITS: UTILIZATION BY WWP WARRIORS

Breakdown of the education benefits utilized by WWP warriors.



VETERAN READINESS AND EMPLOYMENT PROGRAM


The Veteran Readiness and Employment (VR&E) program, offered by the VA, aids with job training, employment, resume development, and job-seeking skills coaching for veterans whose service-connected disabilities make it hard to prepare for, obtain, or maintain employment.²²

About one in five (20.2%) WWP warriors indicated they have used the VR&E program. Of those who have used the program, employment through long-term services was cited as the most frequently used service (55.4%).

TABLE 8. VR&E PROGRAM: UTILIZATION BY WWP WARRIORS
 Breakdown of services used by WWP warriors who used the VR&E program.

SERVICE	UTILIZATION BY WWP WARRIORS WHO USED VR&E
EMPLOYMENT THROUGH LONG-TERM SERVICES	55.4%
RE-EMPLOYMENT	28.5%
RAPID ACCESS TO EMPLOYMENT	14.4%
SELF-EMPLOYMENT	8.4%
INDEPENDENT LIVING	7.2%

VA RATINGS

 *The VA considers a rating above 70% to be “severe”.*²⁴

According to the VA, the prevalence of veterans with service-connected disability ratings has been increasing since 2001.²³ WWP serves a specific population — veterans who served on or after Sept. 11, 2001, and who sustained an injury or illness related to their service. A high percentage of WWP warriors with VA disability ratings is to be expected. However, VA disability ratings also show that the number and severity of injuries and

illnesses within the WWP warrior population is significantly greater than that of the general U.S. veteran and post-9/11 veteran populations.

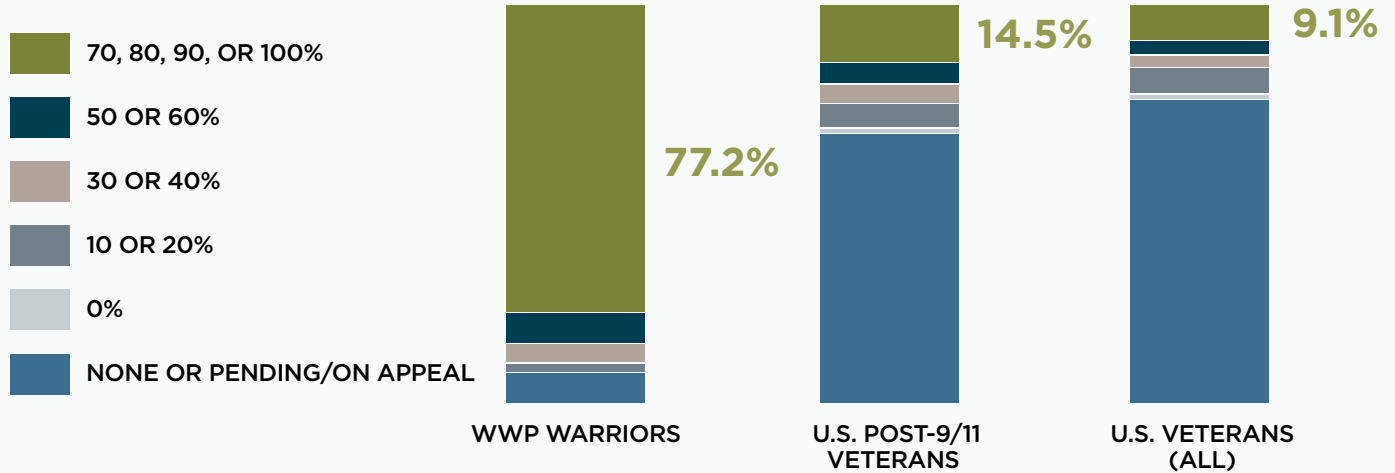
Nearly all WWP warriors have a service-connected disability rating (92.5%). This is about four times as prevalent as what is observed among all U.S. veterans (23.2%) and nearly three times as prevalent compared with all post-9/11 veterans (31.7%).

.....
Nearly 4 in 5 WWP warriors have a service-connected disability rating of 70% or higher.

A higher VA disability rating indicates a greater number of service-connected conditions and a greater severity of each condition. Nearly four in five WWP warriors have a rating of 70% or higher (77.2%), which is significantly greater when compared with all post-9/11 veterans (14.5%) and all U.S. veterans (9.1%). Among WWP warriors, 5.2% have no VA disability rating and 2.3% have a VA claim pending or on appeal.

FIGURE 11. VA SERVICE-CONNECTED DISABILITY RATING: COMPARISON OF WWP WARRIORS AND VETERAN POPULATIONS

WWP warriors, U.S. post-9/11 veterans and U.S. veterans (all).



Data Source: Wounded Warrior Project³ and U.S. Census Bureau.⁴ Includes those who did not report a VA service-connected disability rating.

VA DISABILITY COMPENSATION

Veterans who have incurred injuries or illnesses related to their service are eligible to receive disability compensation from the VA. As a population with a high prevalence of service-connected injuries and illnesses, the vast majority of WWP warriors reported receiving disability compensation (91.2%).

Of WWP warriors, 91.2% were receiving disability benefits, 5.7% were not receiving benefits, and 3.2% had a claim pending or on appeal with the VA.

PHYSICAL EVALUATION BOARD RATINGS

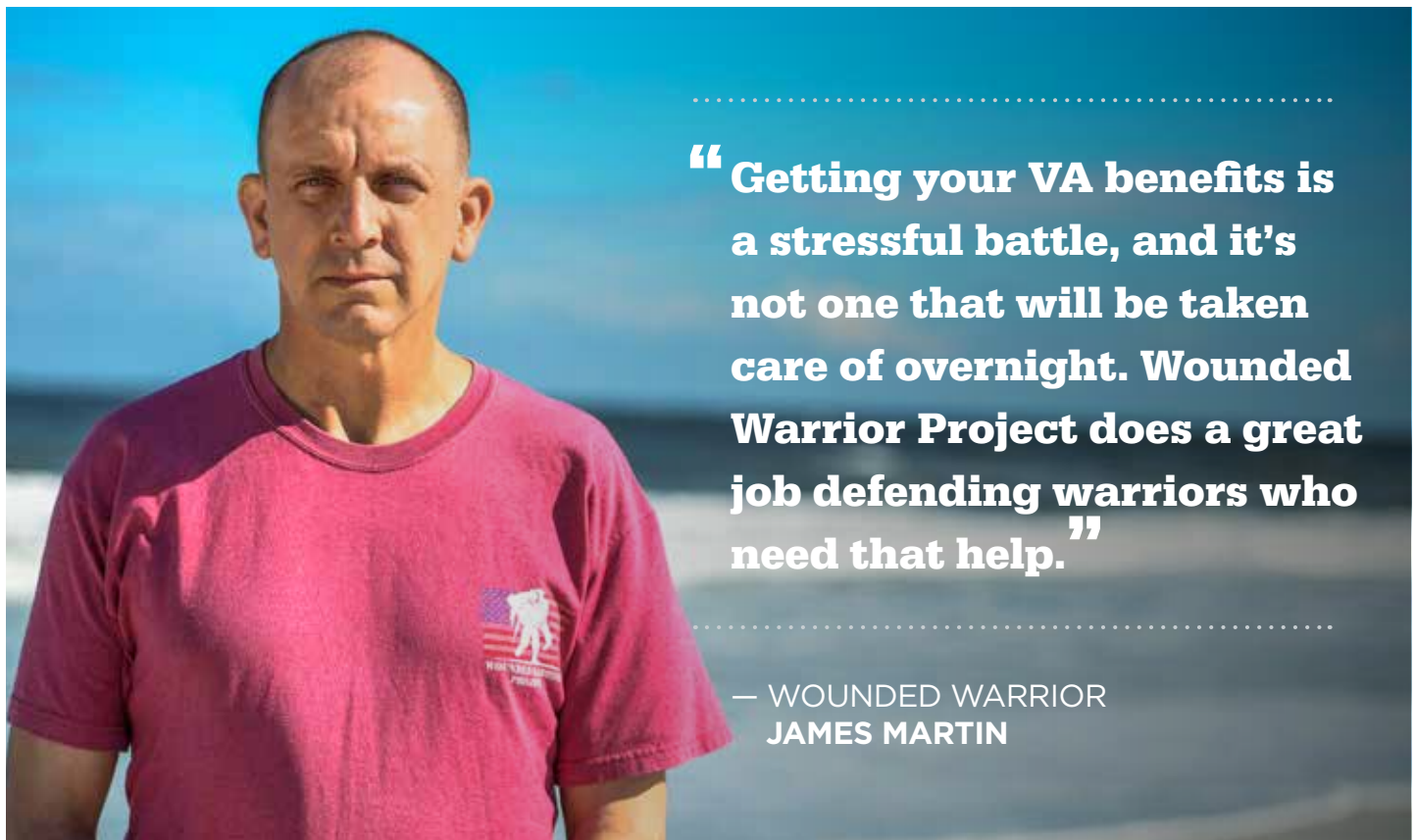
The Physical Evaluation Board (PEB) rating is distinct from the VA disability rating in that the PEB rating only considers the conditions that prevent service members from continuing in their military service.

Of all WWP warriors, 46.8% indicated a PEB rating, 50.2% had no PEB rating, and 3% had a claim pending or on appeal.

TABLE 9. PEB RATINGS: WWP WARRIORS

Breakdown of PEB ratings among WWP warriors.

PEB RATING	PERCENTAGE AMONG WWP WARRIORS
0% RATING	1.2%
10% OR 20% RATING	4.6%
30% OR 40% RATING	6.8%
50% OR 60% RATING	6.5%
70% RATING OR HIGHER	27.7%
CLAIM PENDING OR ON APPEAL	3.0%
NONE	50.2%



A man with a prosthetic left leg stands on a paved path lined with palm trees. He is wearing a grey polo shirt, light-colored shorts, and a watch. The background is a bright, sunny outdoor setting with a row of palm trees receding into the distance. The man's prosthetic leg is visible, and he is wearing a dark athletic shoe on it. The overall tone is positive and resilient.

VETERAN IDENTITY

WOUNDED WARRIOR
BRYAN WAGNER

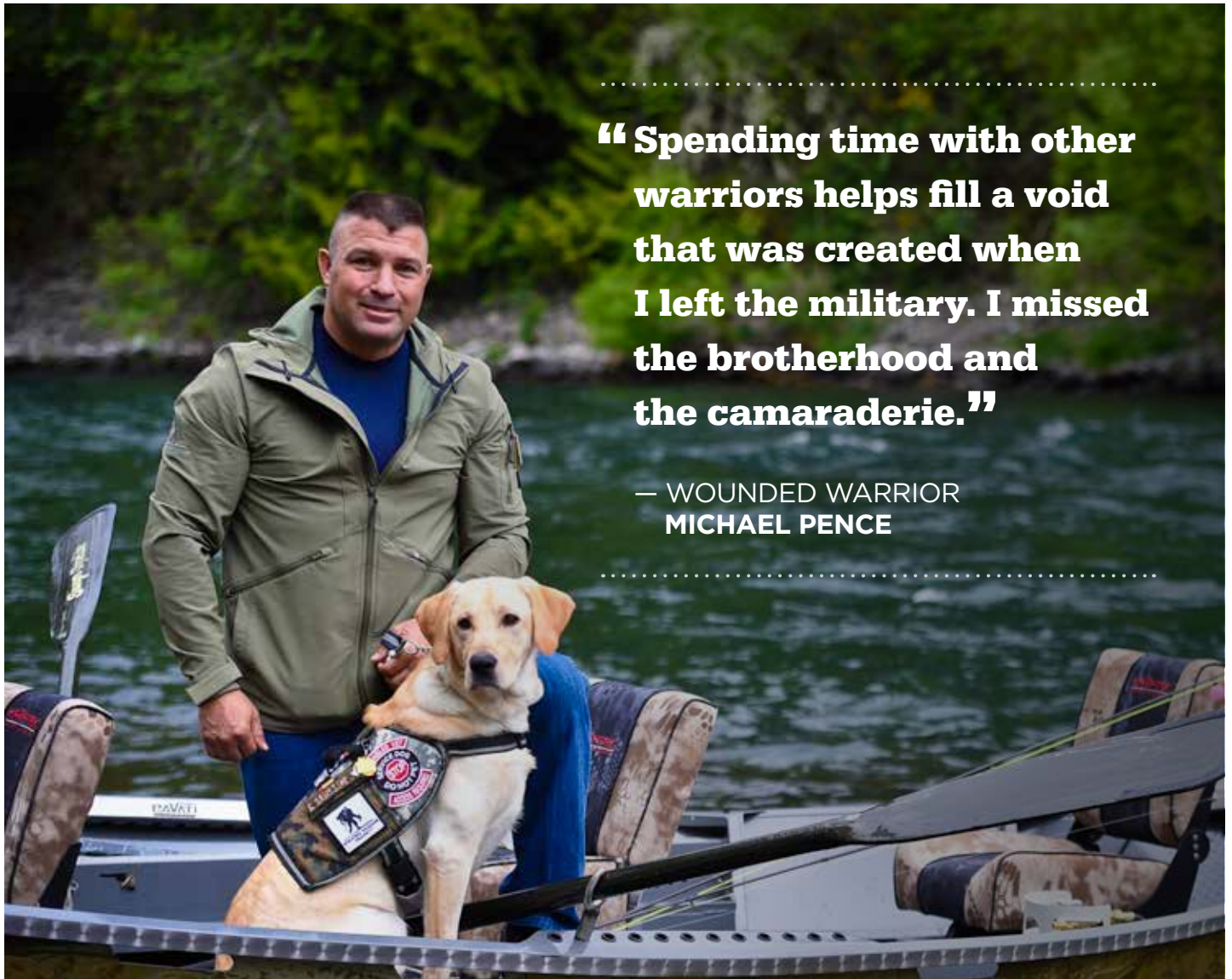
» VETERAN IDENTITY

Military-to-civilian transitions can pose many challenges, as transitioning out of the military can be a dramatic shift due to the distinct differences in culture between military life and civilian life.²⁵ Particularly challenging when leaving the military is feeling an absence of camaraderie with fellow service members and losing the sense of purpose toward a common goal or mission that the military provided. Understanding veteran identity as veterans transition out of the military can aid efforts in providing the social support they need and mitigating feelings of isolation or other hardships they may experience once leaving service.



Veteran identity is defined as veterans' self-concept, derived from military experiences.²⁶

Across all elements of veteran identity, WWP warriors indicated the greatest level of disagreement regarding their ability to maintain social support of military friends and having people to talk to about the military.



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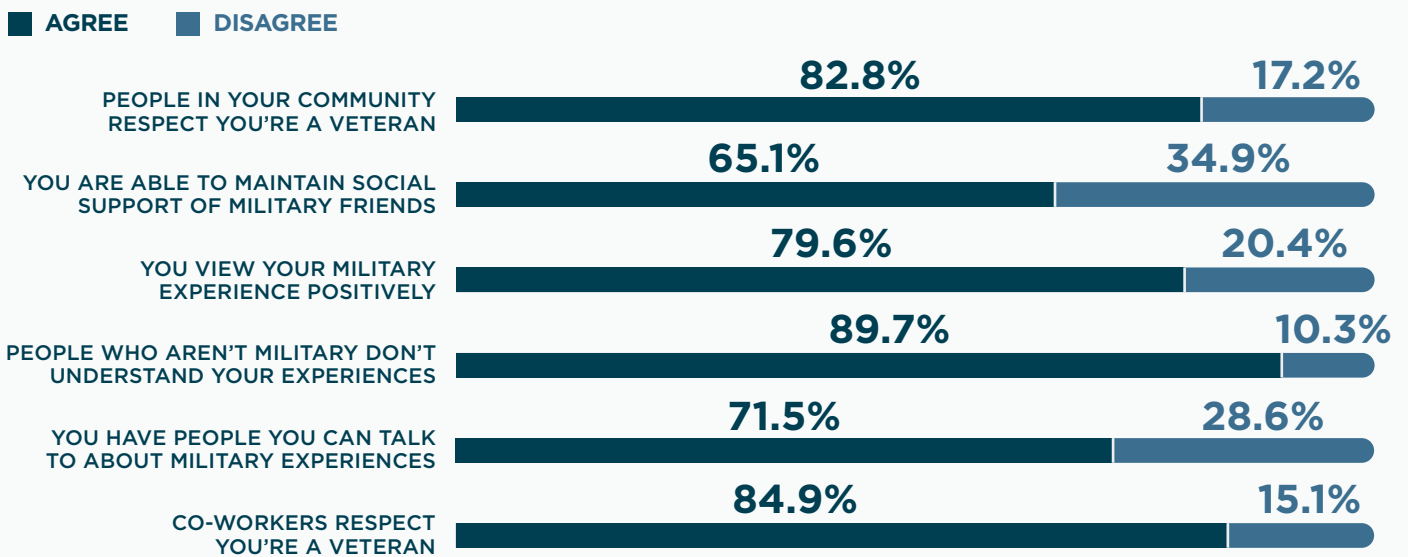
“ Spending time with other warriors helps fill a void that was created when I left the military. I missed the brotherhood and the camaraderie.”

— WOUNDED WARRIOR
MICHAEL PENCE

.....

FIGURE 12. VETERAN IDENTITY: WWP WARRIORS

How strongly WWP warriors agree or disagree with statements related to veteran identity.

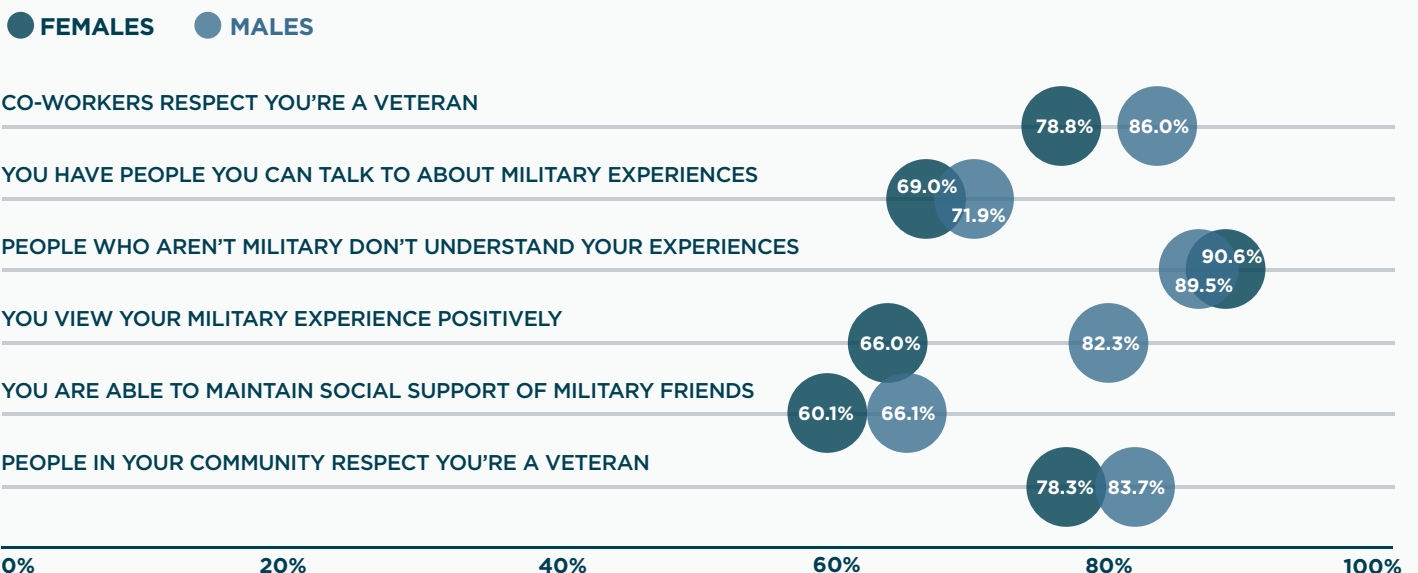


VETERAN IDENTITY BY SEX

The survey asked warriors to reflect on post-military life and specific factors related to veteran identity. Overall, female warriors, compared with male warriors, less frequently agreed that their military experience was positive (66% vs. 82.3%), that they were able to maintain a social support of military friends (60.1% vs. 66.1%), and that they had co-workers who respected their veteran status (78.8% vs. 86%).

FIGURE 13. VETERAN IDENTITY: WWP WARRIORS, BY SEX

Percentage of WWP warriors who agree or strongly agree, by sex.





**SERVICE-RELATED
INJURIES AND HEALTH
PROBLEMS**

WOUNDED WARRIOR
YOMARI CRUZ

SERVICE-RELATED INJURIES AND HEALTH PROBLEMS

As evidenced by high VA disability ratings, the WWP warrior population has a high prevalence of service-connected injuries and illnesses. Service-connected injuries can result in a combination of social, economic, and health challenges with long-term and cumulative effects on quality of life.²⁷ Understanding the prevalence and types of injuries and health problems among the WWP warrior population is a critical step in lowering or mitigating significant and life-threatening challenges post-service.

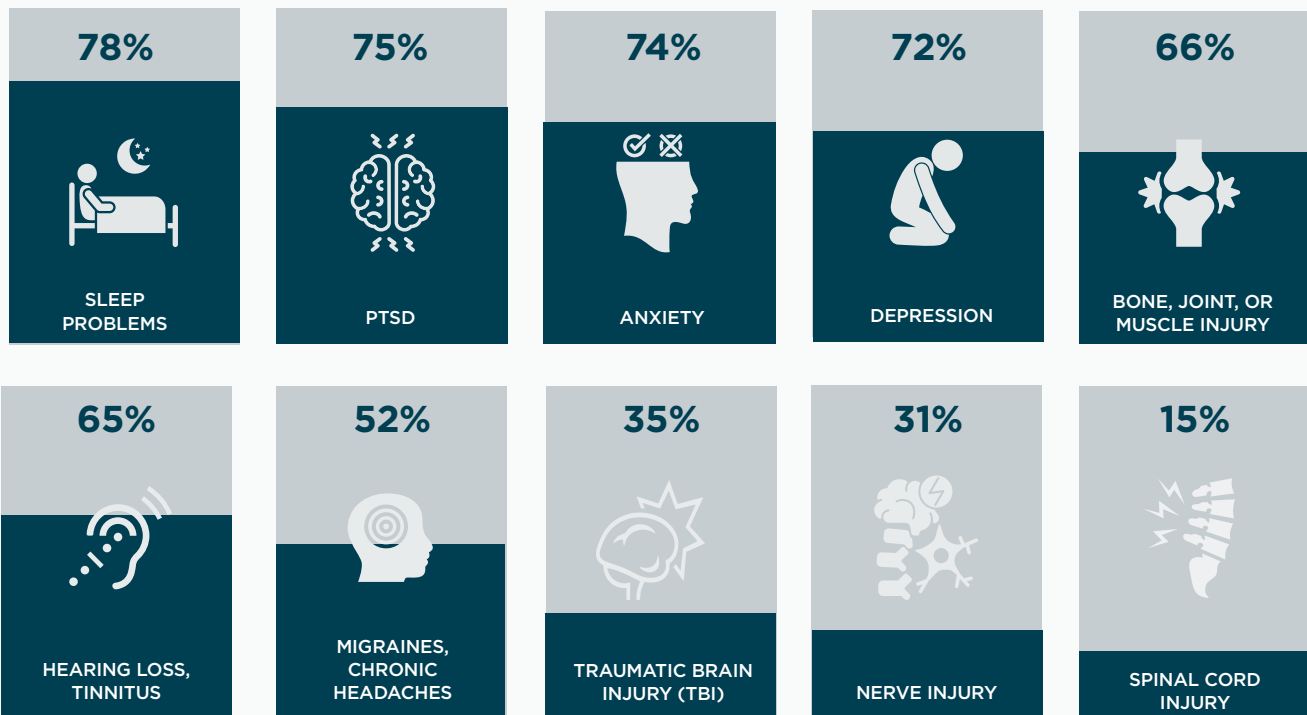
Mental health problems are more than twice as common as physical ones among WWP warriors.

SELF-REPORTED INJURIES AND HEALTH PROBLEMS

Overall, WWP warriors reported an average of six service-related injuries or health problems, with mental health problems being more than twice as common as physical. Sleep problems were the most frequently cited (78.1%), followed by post-traumatic stress disorder (PTSD) (75.4%), anxiety (74%), and depression (72%). Of WWP warriors who self-reported an injury, 84% reported both mental and physical health-related injuries or problems.

FIGURE 14. TOP 10 SELF-REPORTED SERVICE-RELATED INJURIES AND HEALTH PROBLEMS AMONG WWP WARRIORS

Any severe physical or mental injuries OR health problems as a result of physical or mental injuries (incurred while serving or as a result of serving in the military on or after Sept. 11, 2001).





Sleep problems were the most frequently self-reported injury or health issues among WWP warriors, which can be a result of both physical and mental health injuries or problems.

MILITARY SEXUAL TRAUMA

In the 2021 survey, WWP warriors were asked about MST in two separate contexts. First, MST was included in a list of possible injuries incurred during service. In this context, 10% of warriors selected MST as an injury they had experienced during service. Later in the survey, warriors were asked again about MST but in more detail surrounding specific experiences. In this context, more warriors reported experiencing MST; 16.3% indicated they had experienced sexual assault or sexual harassment involving military personnel (active duty or Reserve), DoD civilian employees, and/or contractors (of either gender) while in the military.



The VA defines military sexual trauma (MST) as sexual assault or harassment experienced during military service. Sexual harassment is the request for or pressure to engage in sexual favors (i.e., threats of negative treatment, refusal to cooperate, or promises of better treatment in exchange for sex), unsolicited sexual advances, or verbal comments that are sexual in nature. Sexual assault is unwanted sexual contact or activities without your consent, including when you are asleep or intoxicated and being overpowered or physically forced to have sex.²⁸ MST, like any trauma, is associated with a higher likelihood of PTSD, depression, and substance use disorder (SUD).²⁹

“ I was a victim of military sexual trauma and I carried that with me through my military career. WWP has helped me build resilience and I’m not ashamed anymore. I’m strong, I’m bold, I’m courageous.”

— WOUNDED WARRIOR
TONYA OXENDINE





Nearly 7 in 10 female WWP warriors and 3 in 50 male WWP warriors reported that they have experienced MST.

The survey found that nearly seven in 10 (67.1%) female WWP warriors and three in 50 (5.8%) male WWP warriors had experienced MST. Of all warriors, 15.3% reported being sexually harassed, and 9.8% reported being sexually assaulted.

SEXUAL ASSAULT

The rate of sexual assault among female WWP warriors is significantly higher compared with estimates among females in the U.S. general population. More than two in five (44%) female WWP warriors indicated sexual assault, compared with more than one in six (17.6%) females in the U.S. general population.³⁰ The rate of sexual assault among male WWP warriors is almost one in 30 (2.7%), which is similar to the rate of one in 33 (3%) of males in the U.S. general population who are estimated to have been sexually assaulted.³⁰

Female WWP warriors indicated **experiencing sexual assault at a rate more than two times higher** than females in the U.S. general population.

AMPUTATIONS AND PROSTHETICS

One in 100 WWP warriors indicated amputation as a service-related injury, and one in 25 warriors indicated they have a prosthesis.

PROSTHESIS AND AMPUTATIONS

Among WWP warriors with a prosthesis (3.9%), 22.7% were persons with amputation as a result of post-9/11 military service. The remaining 77.3% did not self-report an amputation as a result of post-9/11 military service.



A closer look at WWP warriors with service-connected amputation:

- 92.5% are male
- They have an average age of 42 years
- The Army was the most common branch served in (44.3%), and 22.2% served in two or more branches
- They have an average of four deployments
- They have an average of seven self-reported physical or mental health conditions or injuries
- 90% have a VA disability rating of 70% or higher

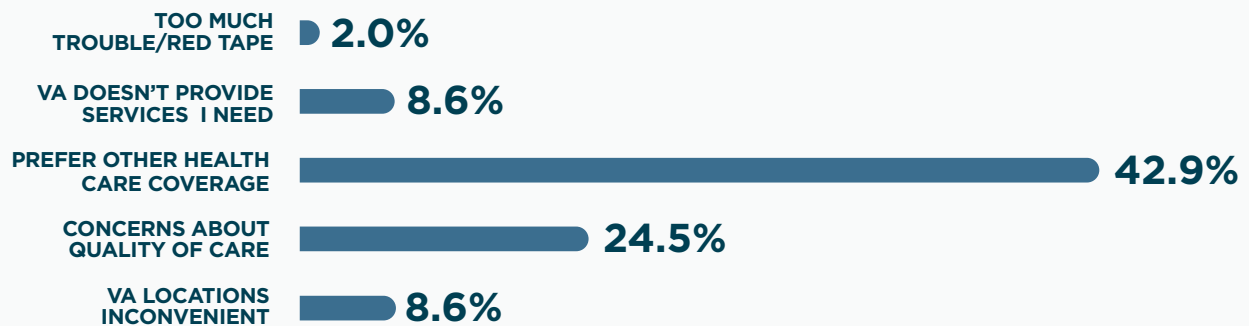
SERVICES USED FOR PROSTHETIC WORK

Among WWP warriors with a prosthesis, more than half (56.3%) exclusively used a VA Medical Center for prosthetic work, 12.8% used services from both the VA and DoD, 9.3% exclusively used services from the DoD, and 21.6% selected “other.”

The survey included questions about why warriors choose not to use VA health care services in general. Though the survey did not ask specifically about barriers to seeking prosthetic work, we were able to look at the top cited reasons for not using VA health care services specifically among warriors who also indicated that they do not use the VA or DoD for prosthetic work. The most common reasons reported among this group were **preferring other health care, concerns about quality of care, and inconvenient locations.**

FIGURE 15. BARRIERS TO VA CARE AMONG WARRIORS WHO DON'T USE VA FOR PROSTHETIC WORK

Of WWP warriors with a prosthesis who do not use VA or DoD services for prosthetic work.



Note: Subset of WWP warriors who reported the need for prosthetics but who do not use the VA or DoD for prosthetics. Respondents were able to “select all that apply.”

AID AND ASSISTANCE NEEDED (CAREGIVING)

About one in four WWP warriors (25.2%) need the aid and assistance of another person because of their injuries or health problems, with mental health problems being the leading cause. Of those who require aid and assistance:

- 39% need aid due to mental health injuries
- 23.3% need aid due to physical health injuries
- 37.7% need aid for both physical and mental health injuries

AGE AND NEED FOR ASSISTANCE

The average age of WWP warriors who reported needing aid and assistance is 43 years — just slightly older than those who did not report needing aid and assistance (42 years).



A closer look at WWP warriors who need aid and assistance:

- 84.7% are male
- 73.1% are married
- 93.5% have been deployed at least once
- 92.1% have a VA rating of 70% or higher
- 23.6% participate in the VA Program of Comprehensive Assistance for Family Caregivers (PCAFC)

Often referred to as the “caregiver program,” the PCAFC provides various resources and support to caregivers of eligible veterans.

CAREGIVER RELATIONSHIPS AND TIME NEEDED

Among those who indicated a need for aid and assistance, the vast majority (75%) reported their spouses as their caregivers, 8.3% reported their parents or siblings as their caregivers, and 3.5% reported their children as their caregivers.

On average, warriors who need aid and assistance reported needing 21 to 30 hours per week; 30.4% reported needing 40 hours or more.

TABLE 10. HOURS OF ASSISTANCE NEEDED PER WEEK: WWP WARRIORS

Average hours of assistance needed from another person per week (among WWP warriors who need aid and assistance).

AVERAGE HOURS NEEDED PER WEEK	PERCENTAGE AMONG WWP WARRIORS WHO NEED AID AND ASSISTANCE
10 HOURS OR LESS	23.4%
11-20 HOURS	19.2%
21-30 HOURS	16.4%
31-40 HOURS	10.6%
MORE THAN 40 HOURS	30.4%

INSTRUMENTAL SUPPORT

For warriors who rely on others for aid and assistance, it's important that they feel supported and that the support they receive is sufficient and reliable. In an effort to understand warriors' needs as it pertains to tangible aid or support, the survey measured perceived instrumental support, which is the perception that people within a social network are available and able to provide the material or functional aid in carrying out daily activities or tasks.

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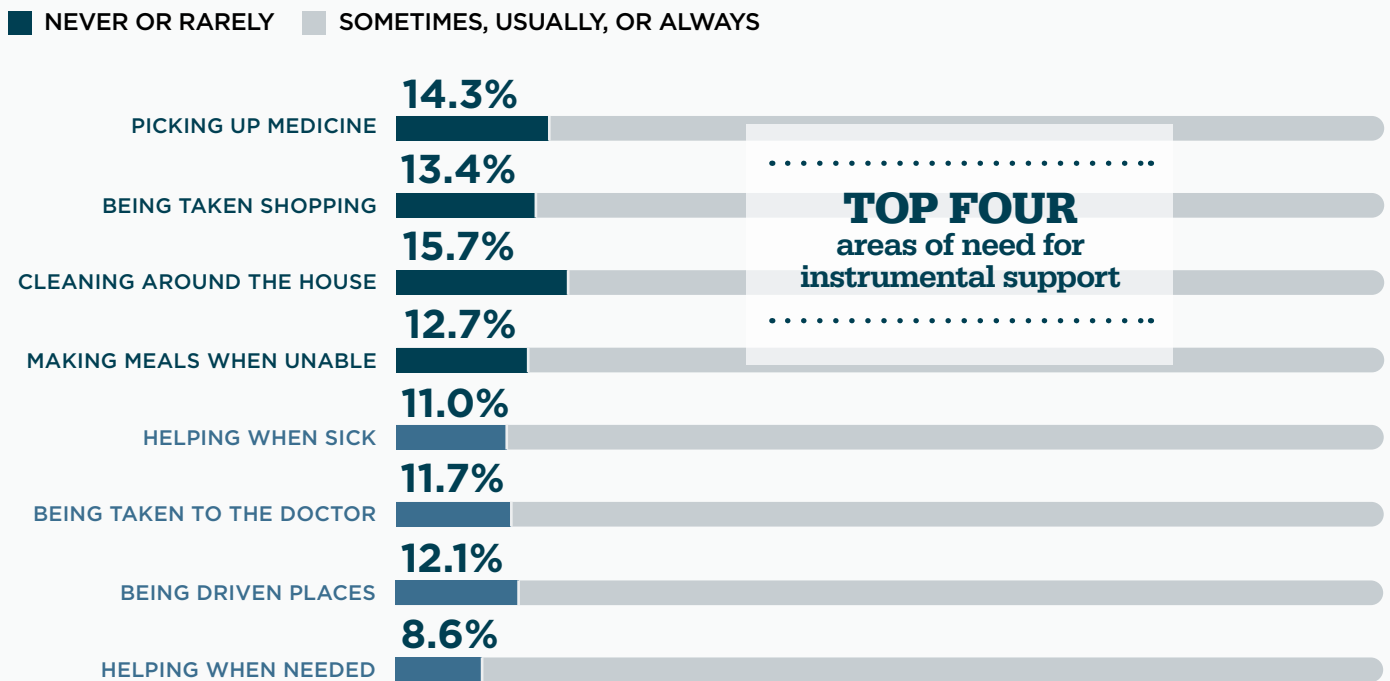
About 4 in 5 WWP warriors reported normal or high levels of instrumental support.

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Of those in need of aid or assistance, 79.1% reported normal or high levels of instrumental support (combined), with 20.9% indicating low support.

FIGURE 16. PERCEIVED LEVELS OF INSTRUMENTAL SUPPORT: WWP WARRIORS

Areas of instrumental support received by warriors in need of aid and attendance from another person.



PERCEIVED SUPPORT AND ASSISTANCE NEEDED

As the number of hours in aid and assistance increases, so does the level of perceived instrumental support. This may suggest that warriors who receive fewer hours could benefit from, and feel more supported with, an increase in the number of hours they receive in aid and assistance from another person.

HOUSEBOUND

About 8.2% of WWP warriors indicated they are permanently housebound as a result of their injuries or health problems. Of those who are housebound:

- 90.8% live with one or more persons
- 61.3% live in a household with children
- 85.2% need aid for both physical and mental health injuries
- 13.1% need aid due to mental health injuries only
- 1.8% need aid due to physical health injuries only

.....

About 8.2% of WWP warriors indicated they are **permanently housebound** as a result of their injuries or health problems.

.....

TOXIC EXPOSURES

Toxic exposure is defined as being exposed to or coming into contact with hazardous chemicals, materials, or other toxic substances during military service.³¹ Military personnel can knowingly or unknowingly come into contact with hazardous or toxic substances while deployed during specific times of war or while not deployed but doing daily work, such as stripping paint from aircraft parts or handling jet fuel.

Exposure to hazardous materials and toxic substances can have long-term negative health effects linked to respiratory, renal, cardiovascular, and reproductive disease or dysfunction. The extended length of time between toxic exposure and the onset of symptoms imposes many challenges in understanding the direct relationship between toxic exposure and health conditions.



Nearly all WWP warriors reported exposure to hazardous or toxic substances during military service.

Exposure to hazardous or toxic substances was reported among 97.9% of warriors. Even when assessing warrior exposure to each of the specific substances or materials, prevalence among the top six most common exposures was reported at 73% and higher. Comparable surveillance of toxic exposure among the civilian population is limited; thus it is difficult to assess the degree to which the civilian population is exposed to hazardous or toxic substances and experiences any disparate impacts.

Definitions:

Toxic exposure: hazardous chemical, hazardous material, or other toxic substance exposure during military service

Exposure-related symptoms: the observed or detectable signs of illness or injury reportedly linked to toxic exposure

Exposure-related conditions: long-term and chronic illness or disease

Top three toxic exposures, of all WWP warriors:



88.3%

dust and sand



84.8%

diesel, kerosene, and/or other petrochemicals

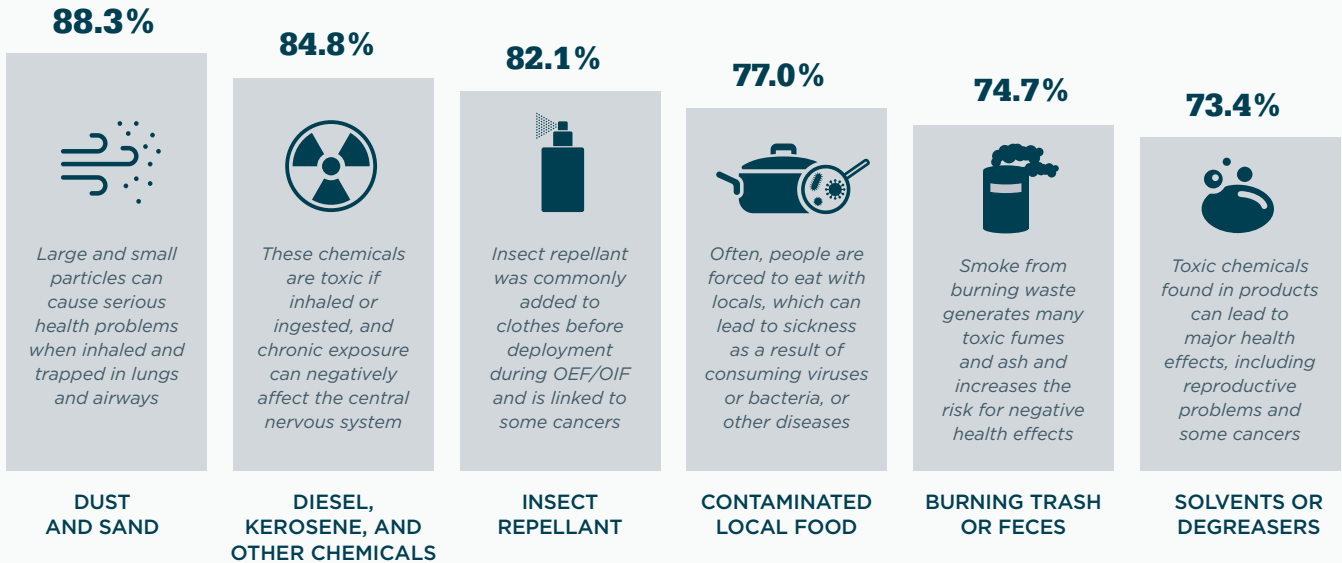


82.1%

insect repellent (spray, lotion, or cream)

FIGURE 17. TOXIC EXPOSURE: WWP WARRIORS

Percentage of WWP warriors who reported being exposed to specific hazardous chemicals, materials, or other toxic substances during military service.



BURN PITS

Emissions from burn pits contain harmful chemicals and toxins that are dispersed into the air. Being near burn pits can result in exposure to toxic emissions that can potentially lead to latent health problems with long-term effects. The use of most burn pits has been banned because of these health risks.



Definition:

A **burn pit** refers to an area of a deployed military base devoted to open-air combustion of waste.



More than 7 in 10 WWP warriors reported exposure to burn pits.

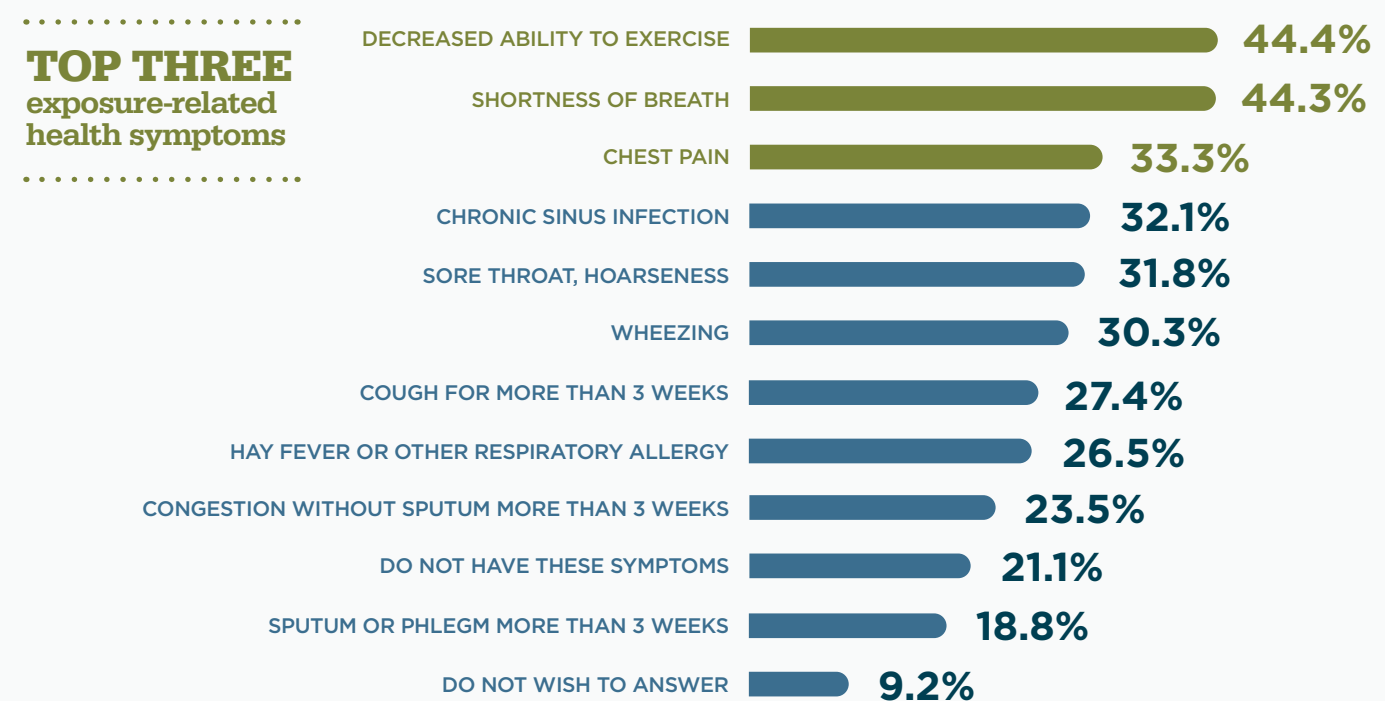
Among WWP warriors who were deployed to OEF, OIF, or OND (where burn pits were most commonly used), 80.5% indicated burn pit exposure — most of whom were exposed daily or weekly (84.3%).

EXPOSURE-RELATED SYMPTOMS

Warriors who reported toxic exposure were asked follow-up questions about what symptoms they've experienced as a result of the exposure(s). The three most common exposure-related symptoms reported were decreased ability to exercise (44.4%), shortness of breath or breathlessness (44.3%), and chest pain (33.3%).

FIGURE 18. EXPOSURE-RELATED SYMPTOMS: WWP WARRIORS

WWP warriors who reported experiencing symptoms linked to toxic exposure.



Note: Percentages do not total 100%, as warriors were asked to choose all that apply.

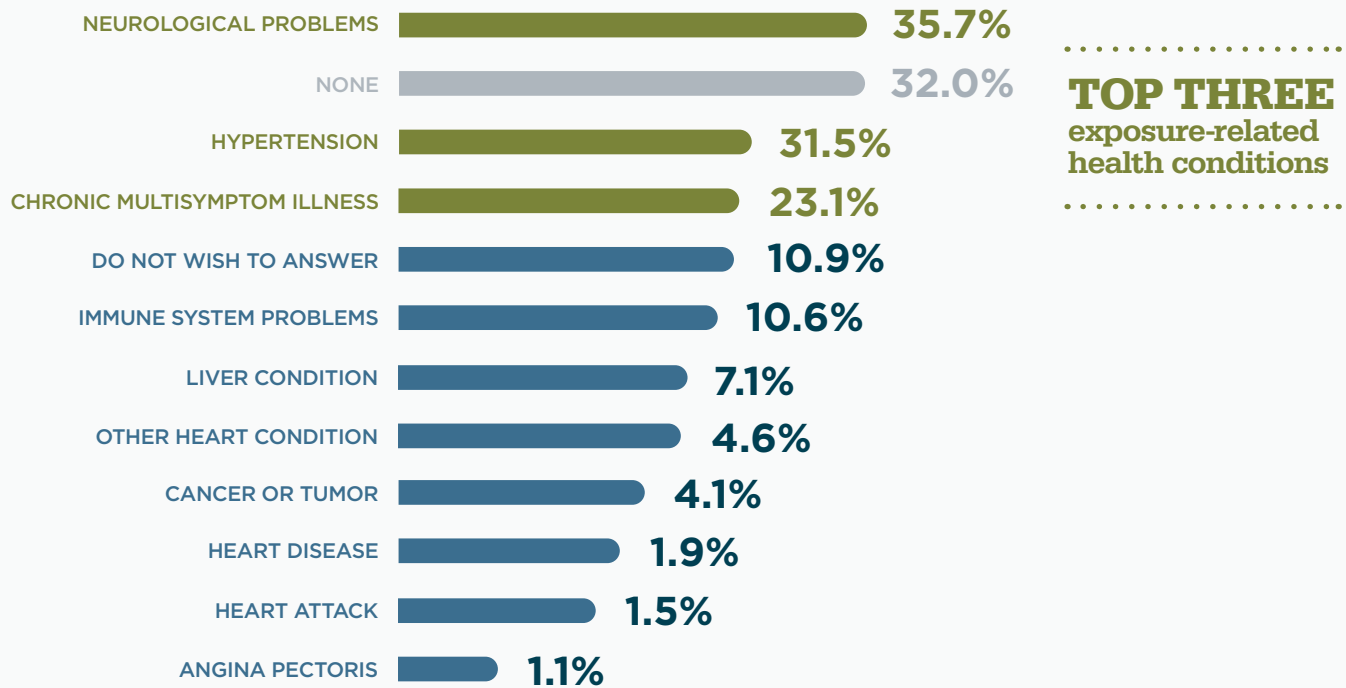
EXPOSURE-RELATED HEALTH CONDITIONS

Warriors who reported toxic exposure were also asked follow-up questions about what health conditions they've experienced as a result of the exposure(s). These include long-term and chronic diseases that can negatively impact warrior health and may require ongoing medical treatment.

The three most common exposure-related health conditions were neurological problems (e.g., numbness, tingling, or weakness in arms or legs or difficulty with thinking or memory) (35.7%), hypertension (high blood pressure) (31.5%), and chronic multisymptom illnesses (23.1%).

FIGURE 19. EXPOSURE-RELATED HEALTH CONDITIONS: WWP WARRIORS

WWP warriors who reported experiencing health conditions linked to toxic exposure.†



Note: Percentages do not total 100%, as warriors were asked to choose all that apply.

EXPOSURE-RELATED TREATMENT

Warriors were then asked if they had received treatment at the VA for toxic exposure: 9% reported receiving treatment at the VA for toxic exposure, and 8.9% reported that they tried but have not received treatment at the VA. More than half have not received or tried to receive treatment (56.4%), and a quarter have not received treatment but are enrolled in the VA Burn Pit Registry (25.7%).

TABLE 11. TREATMENT FOR TOXIC EXPOSURE: WWP WARRIORS

Treatment for toxic exposure and enrollment in the VA Burn Pit Registry among WWP warriors (non-active duty).

TREATMENT FOR TOXIC EXPOSURE	PERCENTAGE OF WWP WARRIORS
YES	9.0%
NO, BUT I TRIED TO RECEIVE TREATMENT AT THE VA	8.9%
NO, BUT I HAVE ENROLLED IN THE VA BURN PIT REGISTRY	25.7%
NO, I HAVE NOT TRIED TO RECEIVE TREATMENT AT THE VA	56.4%

EXPOSURE-RELATED INJURY CLAIMS

Among WWP warriors, 15.7% have filed a VA disability claim for an exposure-related condition. Fewer than three in 10 who have filed a VA disability claim for an exposure-related condition have been granted a VA service connection (32.0%).*

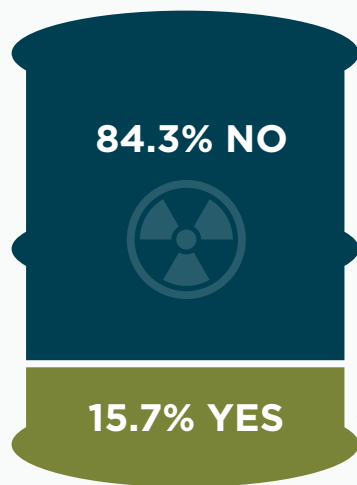


Fewer than 3 in 10 WWP warriors who've filed a VA disability claim for an exposure-related condition **have been granted a VA service connection.***

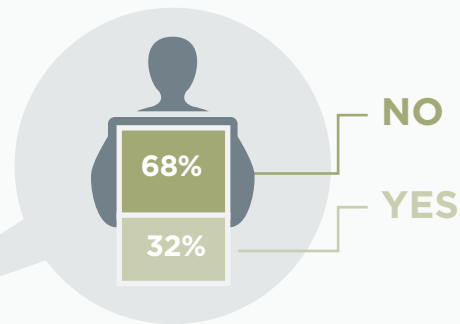
FIGURE 20. EXPOSURE-RELATED INJURY CLAIMS: WWP WARRIORS

VA disability claims for exposure-related conditions and service connection status among WWP warriors (non-active duty).

HAVE YOU EVER FILED A VA DISABILITY CLAIM FOR A CONDITION YOU BELIEVE IS RELATED TO MILITARY TOXIC EXPOSURES?



VA SERVICE CONNECTION GRANTED?



*Only pertains to warriors whose military status is "veteran."



WHOLE-HEALTH WELLNESS

WOUNDED WARRIOR
ANTOINETTE WALLACE

»» WHOLE-HEALTH WELLNESS

The World Health Organization (WHO) defines health as “a complete state of physical, mental and social well-being and not merely the absence of disease or infirmity”.³² While this may look different for everyone, there are ways to assess overall wellness among the warrior population, including quality of life and several health and lifestyle factors, such as physical activity, chronic pain, and sleep. Identifying these factors and tracking changes over time is important in understanding and promoting overall warrior wellness.

OVERALL QUALITY OF LIFE

Given the high number and severity of injuries and health problems reported by WWP warriors, it’s important to understand what impacts these issues may have on overall quality of life. To measure quality of life, warriors were asked to complete the Veterans RAND 12-Item Health Survey (VR-12). The VR-12 is a widely used quality-of-life measure, providing physical and mental health summary scores, reported as a Physical Component Score (PCS), and a Mental Component Score (MCS).³³ Overall, a higher PCS and MCS indicates better health.

On average, WWP warriors had a PCS of 38.8 and an MCS of 36.1 points. When compared with U.S. population standard scores, WWP warriors scored much lower in mental health and only slightly lower in physical health.³³ In relation to the U.S. population standard scores, about three in 10 (29%) fell below population averages for the MCS, and very few (7.3%) fell below population averages for the PCS.



When compared with U.S. population standard scores, **WWP warriors scored much lower in mental health** and only slightly lower in physical health.³³

Mental Component Score:



Warrior average: 36.1



U.S. population average: 50.1

Physical Component Score:



Warrior average: 38.8



U.S. population average: 39.8

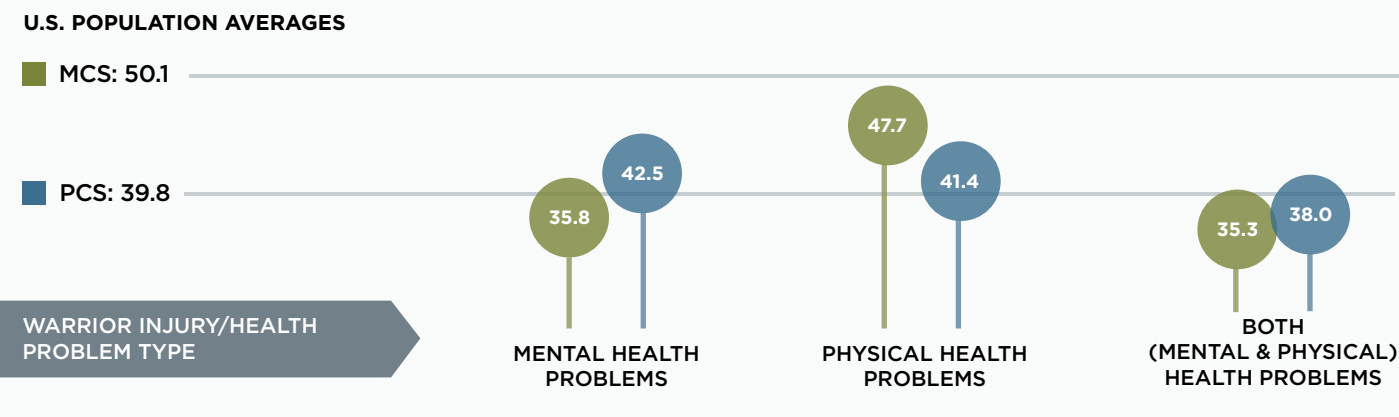
INJURY TYPES AND QUALITY OF LIFE

Further analysis was done to better understand the relationship between MCS and PCS and injuries or health problems — looking at the presence and combination of injury type (mental, physical, or both) and the average MCS and PCS.

The lowest MCS and PCS were found among WWP warriors who reported both mental and physical health problems, making up the majority of the WWP warrior population (82.4%).

FIGURE 21. MCS AND PCS BY INJURY/HEALTH PROBLEM TYPE: WWP WARRIORS

Breakdown of mean MCS and PCS by types of injuries reported by WWP warriors.



BODY MASS INDEX

Body mass index (BMI) is defined as a person's weight (pounds) relative to his or her height (inches) [weight (pounds)/height (inches)² x 703]. BMI is used as an inexpensive and indirect screening method to assess weight category.³⁴

BMI does not account for body fat, or muscle or bone mass; however, BMI is correlated with more direct body fat measures, and BMI is often predictive of body fat.³⁴

BMI weight categories:³⁴

- Underweight** (< 18.5)
- Healthy weight** (18.5-24.9)
- Overweight** (25-29.9)
- Obese** (30-39.9)
- Severely obese** (40+)

Obesity among the WWP warrior population is a concern, as it can have severe negative impacts on mental health and overall quality of life. Obesity is also associated with the leading causes of death (diabetes, heart disease, stroke, and some cancers) in the U.S. and worldwide.³⁴

The average BMI among all WWP warriors was 30.9, which falls within the obese range. A little over half (51.6%) of WWP warriors are considered obese or severely obese (BMI ≥ 30). Obesity rates among the WWP warrior population are comparable to the U.S. adult population, in which about half are also obese or severely obese (51.6%).* The rate of obesity among U.S. adults has continued to increase over the last 20 years, signaling an issue that is not specific to the warrior or overall veteran populations.

*2017-2018 age-adjusted obesity rates of U.S. adults (20 years and older).

FIGURE 22. BMI: COMPARISON OF WWP WARRIORS AND U.S. GENERAL POPULATION

WWP warriors and U.S. general population.

INJURY/HEALTH PROBLEM TYPE	WWP WARRIORS	U.S. GENERAL POPULATION
NORMAL/HEALTHY WEIGHT	12.8%	15.7%
OVERWEIGHT	35.2%	31.1%
OBESE	45.1%	42.4%
SEVERELY OBESE	6.5%	9.2%
UNDERWEIGHT	0.3%	1.6%

Note: 2017-2018 age-adjusted obesity rates of U.S. General Population (adults 20 years and older).

Data Source: Wounded Warrior Project³³ and Fryar, Carroll.³⁵

PHYSICAL ACTIVITY

Physical activity is an important factor in overall health, especially in a population so heavily affected by service-related injuries and health problems. Several studies have shown that physical activity, even in modest amounts, aids in weight management while providing protective effects against psychological disorders, poor sleep, unhealthy aging, and chronic pain.^{36, 37}

Less than half of WWP warriors (48%) met the minimum physical activity recommended by the WHO. On average, WWP warriors are sedentary for 6.5 hours per day, which is in line with the U.S. general population* (6.4 hours per day).



The World Health Organization (WHO) Physical Activity Guidelines: The WHO recommends that adults participate in at least 150-300 minutes of moderate-intensity aerobic activity, 75-150 minutes of vigorous-intensity aerobic activity, or an equivalent combination of both moderate- and vigorous-intensity aerobic activity while limiting overall sedentary behavior throughout the week to promote good health.³⁸

*A nationally representative survey of the U.S. population found that sedentary time among adults increased from 5.5 hours to 6.4 hours per day between 2007 and 2016.^{39, 40}

CHRONIC PAIN AND PHYSICAL ACTIVITY

Engaging in physical activity can be a challenge for warriors who experience chronic pain. WWP warriors with chronic pain compared with those without chronic pain are significantly less likely to meet physical activity recommendations (42% vs. 61.8%, respectively). Additionally, WWP warriors experiencing chronic pain have a statistically significant higher average sedentary minutes per day than those without chronic pain (398.9 vs. 370.3 minutes per day, respectively).

CHRONIC PAIN

Chronic pain is relatively common among the U.S. general population and even more common among veterans: According to the Centers for Disease Control and Prevention (CDC), 20.4% of U.S. adults suffer from chronic pain, and 8% experience severe pain — veterans being 40% more likely to experience severe pain than non-veterans.⁴¹ More than half of post-9/11 veterans who receive care from the VA were being treated for pain-related health conditions.^{41, 42}

.....
Nearly all WWP warriors reported some level of pain, and 77.4% indicated some degree of high-intensity to severely limiting pain.
.....

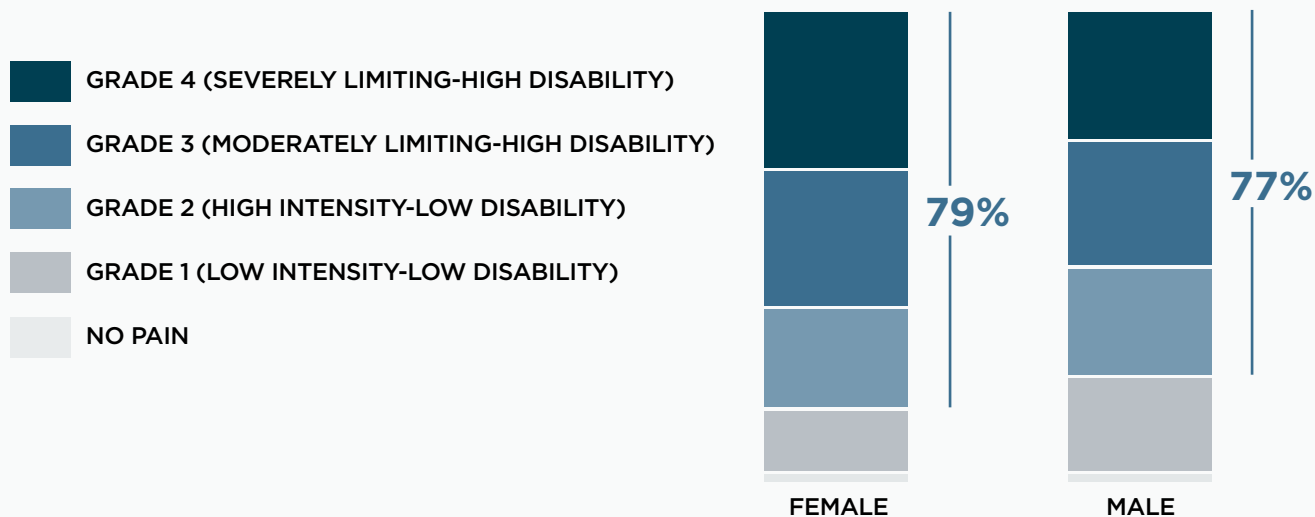
To better understand the prevalence of chronic pain specifically within the WWP warrior population, the Chronic Pain Grade Scale (CPGS) was included in the survey. The CPGS assesses two dimensions of pain — pain intensity and pain-related disability — and is suitable for use with all chronic pain conditions, including chronic musculoskeletal and low back pain.⁴³ The CPGS scores quantify the frequency and interference of pain during daily activities and segments them into four grades of pain, with higher grades indicating greater disability and severity of pain.

Nearly all WWP warriors reported some level of pain (97.3%), and 77.4% indicated some degree of high-intensity to severely limiting pain (grades 2 to 4). The largest share — nearly two in seven warriors (27.9%) — reported pain at the highest level, high-disability to severely limiting chronic pain (grade 4), with observed differences in pain prevalence by sex (Figure 23).

.....
Female warriors had a greater prevalence of higher pain grades than male warriors.
.....

FIGURE 23. CPGS RATING: WWP WARRIORS, BY SEX

Breakdown of CPGS ratings among female and male WWP warriors.



Data Source: Wounded Warrior Project (3) and U.S. Census Bureau (4). Includes those who did not report a VA service-connected disability rating.

SLEEP QUALITY

Previous research by the National Veteran Sleep Disorder Study and other similar research show that veterans more frequently experience sleep disruption than the U.S. general population.⁴⁴ Many issues that lead to sleep disruption that are present during deployment don't go away when veterans return home but often persist post-deployment and well into their retirement years.^{44, 45} Sounds at home can mimic those from deployment, physical and psychological trauma can manifest in the form of night terrors or anxiety (racing mind or worry), and physical wounds can cause chronic pain. The presence of physical and psychological trauma, ranging from mild to severe, perpetuates the cycle of poor sleep quality.



While 78% of WWP warriors self-reported sleep problems, responses to the PSQI suggested this could actually be even more common, as **90.3% screened as having poor sleep quality.**

The Pittsburgh Sleep Quality Index (PSQI)^{*} is a widely used measure of sleep quality and disturbances.⁴⁶ It provides a total summary score of overall sleep quality ranging from zero to 21, with higher scores indicating poorer sleep quality. The overall sleep score is a composite of seven subcomponent scores that influence sleep (duration, disturbance, latency, days of dysfunction due to sleepiness, efficiency, quality, and the need for medication to sleep).⁴⁶

*PSQI is copyright 1989 and 2010. University of Pittsburgh. All rights reserved.



When compared with the U.S. general population, WWP warriors are **more than twice as likely to get fewer than seven hours** of sleep per night.



The American Academy of Sleep Medicine and the Sleep Research Society recommend that adults 18-60 years of age regularly sleep seven or more hours per night to promote good health. Younger adults and adults recovering from sleep deficits or sickness should sleep for more than nine hours per night.⁴⁸

Overall, WWP warriors reported sleeping an average of 5.4 hours per night, with 78.3% reporting fewer than the recommended seven hours of sleep per night. In contrast, only 35.2% of U.S. adults reported sleeping fewer than seven hours per night.^{46, 47}



9.7%

of WWP warriors indicated good quality sleep (PSQI scores of zero to 5)



90.3%

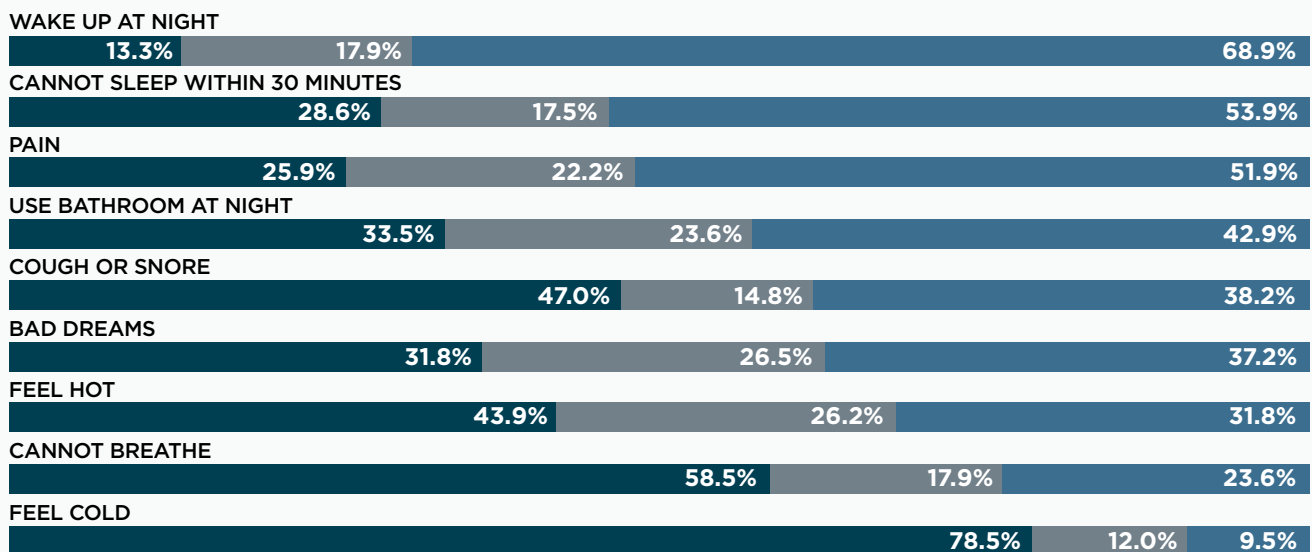
of WWP warriors indicated poor quality sleep (PSQI scores of greater than 5)

FIGURE 24. DISTURBANCES CONTRIBUTING TO POOR SLEEP QUALITY: WWP WARRIORS

How often WWP warriors had trouble sleeping in the past month due to reasons listed.

TIMES PER WEEK

■ NONE OR LESS THAN ONE ■ ONE OR TWO ■ THREE OR MORE



SUBSTANCE USE

Substance use is simply the consumption of drugs or alcohol. Substance use disorder (SUD) is the excessive use of drugs, such as alcohol, pain medications, or illegal drugs, and leads to other life and health problems. Not all substance use is connected to SUD; however, understanding warriors' alcohol and drug behaviors and tendencies can provide more insight into SUD prevalence among the warrior population.

Some service members turn to self-medicating, which is a dangerous coping mechanism that can threaten a veteran's health, personal relationships, and career.⁴⁹⁻⁵¹ According to the VA, it is estimated that one out of five veterans with PTSD also have SUD.⁵² Monitoring substance use within the WWP warrior population is critical given the high prevalence of PTSD and other mental health problems that may put warriors at risk of self-medicating.^{52, 53}



Substance use disorder is associated with negative physical and mental health outcomes, such as depression, anxiety, and increased rates of suicidal ideation and attempts.⁵³

DRUG ABUSE

While SUD considers all substances, use of illicit and prescription drugs was assessed separately from alcohol use. To measure drug abuse, warriors were asked questions from the Drug Abuse Screening Test (DAST-10). The DAST-10 measures the degree of consequences related to drug abuse.⁵⁴

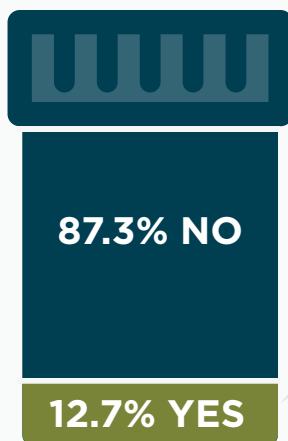
When asked about drug use, 12.7% of WWP warriors reported they had used drugs other than those required for medical reasons in the past year. When looking specifically at this group, 10.6% had a substantial or severe level of problems related to drug abuse.

When looking at all WWP warriors, those with substantial or severe levels of problems related to drug abuse make up 1.3% of the entire warrior population.

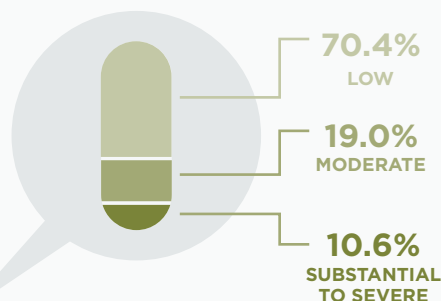
FIGURE 25. DRUG ABUSE: WWP WARRIORS

Drug use and severity of problems related to drug abuse.

HAVE YOU USED DRUGS, OTHER THAN THOSE REQUIRED FOR MEDICAL REASONS, IN THE PAST YEAR?



LEVEL OF PROBLEMS RELATED TO DRUG ABUSE:



ABOUT

1 IN 100

WARRIORS HAVE A SUBSTANTIAL OR SEVERE LEVEL OF PROBLEMS RELATED TO DRUG ABUSE



ALCOHOL ABUSE

In the U.S., alcohol use is the third-leading preventable cause of death.⁵⁵ Alcohol consumption carries substantial consequences, with a negative impact on health, social, and economic outcomes. Alcohol use is associated with several health and psychosocial problems, including increased risk for insomnia, depression, anxiety, hypertension, unsafe sexual activity, motor vehicle accidents, violence, and suicide.⁵⁵

Definition:

Binge drinking: When an individual drinks five or more drinks on the same occasion in a short period of time.



75.3% of WWP warriors **have consumed alcohol in the past year** compared with **69.5%** of the U.S. adult population.

Data Source: Wounded Warrior Project³ and National Institute on Alcohol Abuse and Alcoholism.⁵⁶

In general, alcohol consumption is slightly more common among the WWP warrior population when compared with all U.S. adults.

Excessive alcohol consumption (such as binge drinking) is frequently used by veterans as a way to cope with stress and trauma. However, the survey found that binge drinking is more than twice as common among U.S. adults than the WWP warrior population.



10.6% of WWP warriors **are binge drinkers** compared with **25.8%** of the U.S. adult population.

Data Source: Wounded Warrior Project³ and National Institute on Alcohol Abuse and Alcoholism.⁵⁶

A man with a beard and short hair, wearing a dark t-shirt and jeans, stands on a set of stone steps. He is leaning his left hand on a stone railing and has his right hand on his hip. The background shows a building with classical architectural features, including columns and a pediment. The word "SYRACUSE" is visible on the wall behind him. The entire image has a blue-tinted, monochromatic color scheme.

BRAIN HEALTH

WOUNDED WARRIOR
EARL FONTENOT

BRAIN HEALTH

Head-related trauma and brain injuries, including traumatic brain injuries (TBI), are common among service members, with an increased risk of occurrences among post-9/11 veterans who have been deployed or experienced combat.⁵⁹ Head trauma is an injury to the skull and may or may not result in a brain injury, while a TBI includes any damage to the brain by an external force.⁶⁰

A TBI is characterized as a loss of consciousness or altered mental status caused by a blast, blow, or penetrating force to the head and is further categorized as mild, moderate, severe, or penetrating based on postconcussive symptoms.⁶¹ More than 400,000 service members have been diagnosed with a traumatic brain injury (TBI) over the past 20 years.⁶²

Head traumas and TBIs are of particular interest due to the additional negative and long-lasting consequences on mental and physical health.^{57,63} Understanding the prevalence and impact of brain health conditions among WWP warriors is pertinent to providing immediate and long-term support for warriors as they heal from and live with these conditions.

HEAD-RELATED TRAUMA



A closer look at WWP warriors with head-related trauma:

- **95.7%** had been deployed
- **30.5%** required aid and assistance from a caregiver
- **9.8%** were permanently housebound (8.2% of all warriors reported being housebound)

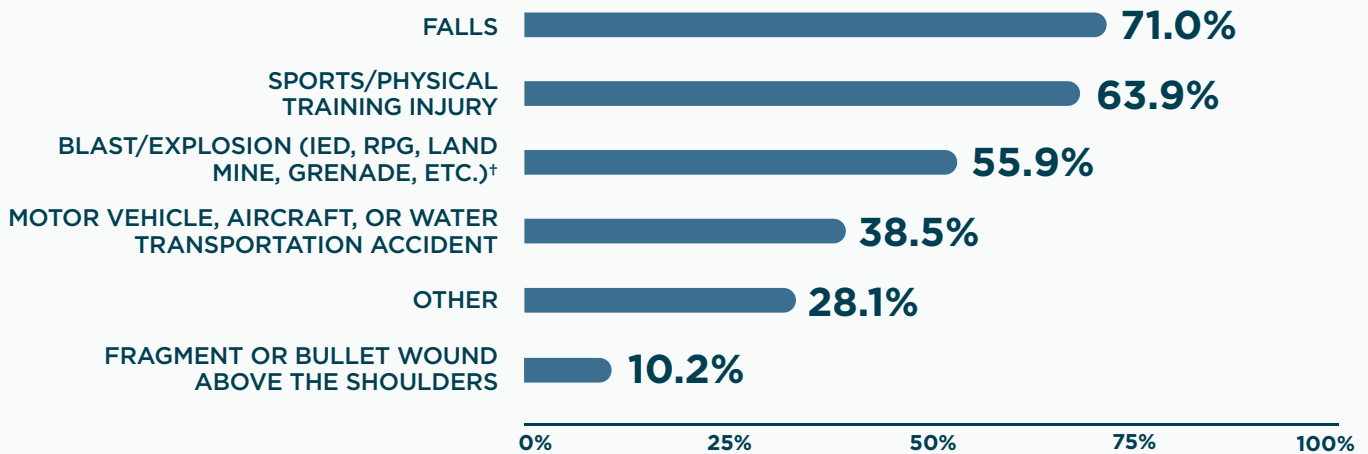
Military service members are at an increased risk of brain injury due to a head-related trauma as a result of blasts or injuries sustained during combat or training exercises.⁶⁵ An overwhelming majority (88%) of WWP warriors have experienced and have been injured by these types of events, which are typically related to head trauma, with 64.3% of warriors experiencing symptoms of a head injury immediately following these events.

We estimate that 34.8% of WWP warriors experienced a TBI as a result of a trauma-related event.*

*TBI was defined as WWP warriors who reported being injured as a result of a trauma-related event and lost consciousness immediately following the event.

FIGURE 26. EVENTS CAUSING HEAD-RELATED TRAUMA: WWP WARRIORS

Incidents or events cited by WWP warriors resulting in head-related trauma.



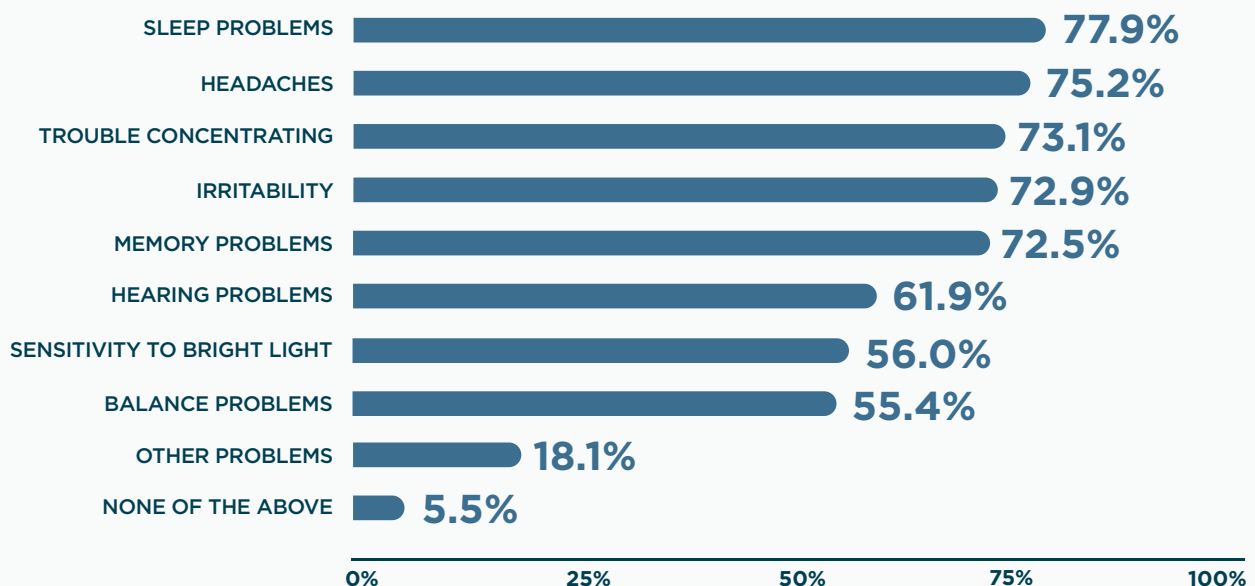
Note: Percentages do not total 100%, as warriors were asked to choose all that apply.

†*IED:* improvised explosive device; *RPG:* rocket-propelled grenade.

Sleep problems (77.9%), headaches (75.2%), and trouble concentrating (73.1%) were the top three most frequently cited problems that began or got worse among WWP warriors who had sustained symptoms associated with head-related trauma (Figure 27).

FIGURE 27. SYMPTOMS OR PROBLEMS AFTER HEAD-RELATED TRAUMA: WWP WARRIORS

Symptoms or problems that began or worsened after any head-related trauma.



Note: Percentages do not total 100%, as warriors were asked to choose all that apply.

TRAUMATIC BRAIN INJURIES

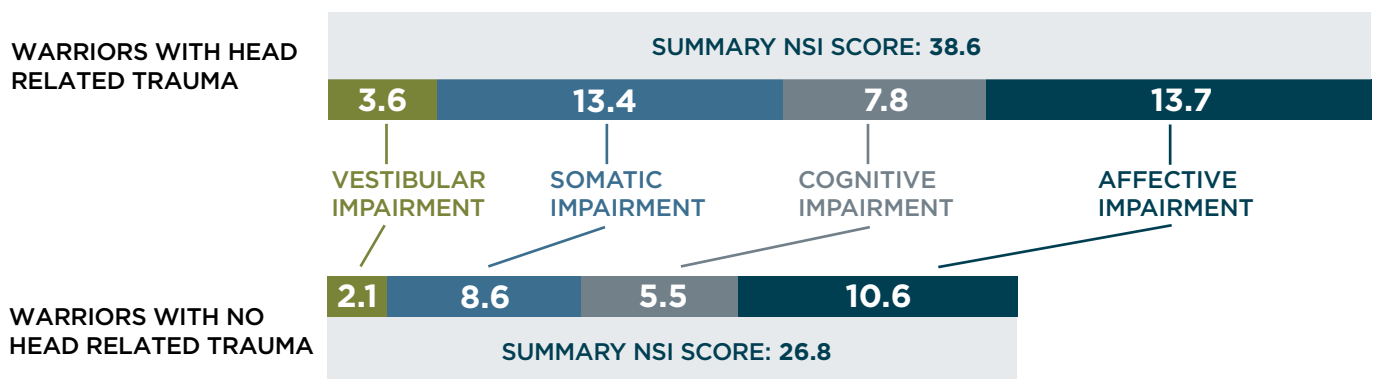
The Neurobehavioral Symptom Inventory (NSI) scale was used to evaluate the presence of postconcussive symptoms as a result of TBIs. The NSI is regularly used by the VA and DoD for TBI evaluations and provides a reliable and valid measure for postconcussive symptoms.⁶⁶ The final summary NSI score indicates the presence and severity of postconcussive symptoms, ranging from zero to 88, with higher scores corresponding to greater distress or impairment as a result of postconcussive symptoms.⁶⁶

Symptom severity and interference is further categorized into four subfactors of postconcussive impairment: vestibular (balance and hearing), somatic (body), cognitive (thinking and reasoning), and affective (mood). WWP warriors with head-related trauma had an overall higher presence and severity of postconcussive symptom impairment than those not exposed to head-related trauma during military service.

WWP warriors who report some form of head-related trauma had a statistically significant higher mean NSI score (38.6) compared with those without head-related trauma (26.8) — with a higher overall mean score indicating greater severity of and impairment from postconcussive symptoms.

FIGURE 28. COMPARISON OF SYMPTOMS: WWP WARRIORS WITH AND WITHOUT HEAD-RELATED TRAUMA

Comparing symptoms or problems between WWP warriors who have experienced head-related trauma and those who have not experienced head-related trauma.





MENTAL HEALTH

WOUNDED WARRIOR
TYSHAWN JENKINS

MENTAL HEALTH

While mental illness can affect anyone, veterans and military personnel are at an increased risk of experiencing one or more mental health-related conditions if they have ever experienced combat or sustained critical service-related injuries.⁵⁷ Over 1 million OEF, OIF, and OND veterans have some mental health need⁵⁸ with approximately 11% to 20% of post-9/11 veterans presenting with post-traumatic stress disorder (PTSD) in a given year.⁶⁴ Within the WWP warrior population, the prevalence of mental health issues is even higher —with mental health problems being more than twice as common as physical problems among WWP warriors. Understanding and tracking changes in these issues over time is critical as efforts that support and aid improvements in mental health contribute to overall health and well-being and if untreated, poor mental health can increase the risk for chronic physical and psychological conditions or illness.



In the past three months, 45.7% of WWP warriors indicated they had visited a doctor, psychologist, or a counselor to get help with issues related to stress, emotions, alcohol or drugs, or family.

ANXIETY

General anxiety is characterized as prolonged (six months or longer) and excessive worry or uneasiness that can lead to symptoms of restlessness, sleep problems, irritability, and difficulty concentrating.⁶⁷ Any form of anxiety can cause disruption and interference in daily activities, job or school performance, and relationships.⁶⁷

Anxiety is the third most common health issue self-reported by WWP warriors. To better understand the presence and severity of anxiety symptoms, the survey included the General Anxiety Disorder 7-Item (GAD-7) scale.



An estimated 31.1% of U.S. adults experience an anxiety disorder at some point in their lives, with greater prevalence among other subgroups, particularly individuals having experienced trauma or with co-occurring physical or psychological conditions.⁶⁹⁻⁷¹



Nearly 3 in 5 WWP warriors presented with moderate to severe anxiety symptoms.

The GAD-7 is a valid and reliable seven-item scale that assesses the presence and severity of anxiety symptoms. The scale's seven items measure how often an individual has been bothered by anxiety-related problems on a 4-point Likert scale of zero (not at all) to 3 (nearly every day), with a final summary score ranging from zero to 21 points.⁶⁸

Overall, WWP warriors scored an average anxiety score of 11.5, which falls within the moderate range of anxiety symptoms — with more than half (63.3%) presenting with moderate to severe anxiety symptoms.

TABLE 12. SEVERITY OF ANXIETY SYMPTOMS: WWP WARRIORS

Severity of anxiety symptoms reported by WWP warriors.

SEVERITY OF ANXIETY SYMPTOMS	PERCENTAGE OF WWP WARRIORS
NO/MINIMAL ANXIETY SYMPTOMS	18.6%
MILD ANXIETY SYMPTOMS	18.1%
MODERATE ANXIETY SYMPTOMS	27.5%
SEVERE ANXIETY SYMPTOMS	35.8%

DEPRESSION

Depression is the fourth most common health issue self-reported by WWP warriors and is characterized as having little or no interest in doing activities that use to be fun, irritability, difficulty concentrating or making decisions, and feelings of helplessness that last for extended periods of time and interfere with everyday functioning.⁷² To better understand the presence and severity of depressive symptoms, the survey included the Patient Health Questionnaire (PHQ-9).



Anyone can experience depression — in 2019, an estimated 7.8% of all U.S. adults and 13.5% of veterans had at least one major depressive episode.⁷⁴ A major depressive episode is characterized as symptoms of major depressive disorder for two weeks or more.⁷⁴

The PHQ-9 is a validated and reliable instrument that assesses the presence and severity of depression based on the nine diagnostic criteria for DSM-IV depressive disorders.⁷³ Total scores range from zero to 27, with higher scores indicating greater depressive symptom severity. PHQ-9 final scores can be divided into five levels of increasing depression severity: minimal (0-4), mild (5-9), moderate (10-14), moderate-severe (15-19), and severe (20-27), and a total score greater than 10 indicates the presence of depressive symptoms warranting further consideration for treatment.⁷³



More than half of WWP warriors presented with moderate to severe depressive symptoms.

Overall, WWP warriors scored an average depression score of 11.1, which falls within the moderate range of depressive symptom severity, with more than half (53.2%) presenting with moderate to severe depressive symptoms (PHQ-9 \geq 10).

TABLE 13. SEVERITY OF DEPRESSIVE SYMPTOMS: WWP WARRIORS

Severity of depressive symptoms reported by WWP warriors.

SEVERITY OF DEPRESSIVE SYMPTOMS	PERCENTAGE OF WWP WARRIORS
MINIMAL DEPRESSIVE SYMPTOMS	20.4%
MILD DEPRESSIVE SYMPTOMS	26.4%
MODERATE DEPRESSIVE SYMPTOMS	22.4%
MODERATE-SEVERE DEPRESSIVE SYMPTOMS	16.3%
SEVERE DEPRESSIVE SYMPTOMS	14.6%

POST-TRAUMATIC STRESS DISORDER

Along with anxiety and depression, PTSD is one of the most common health issues reported by WWP warriors. PTSD is considered a mental health problem that typically occurs after witnessing or experiencing a life-threatening event or other types of traumatic events that lead to feelings of fear, anxiety, anger, sadness, or detachment from other people. To better understand the presence and severity of PTSD symptoms, the survey included the PTSD Checklist for DSM-5 (PCL-5).

The PCL-5 is a validated and reliable tool used by the VA for individuals receiving treatment or mental health care to monitor, screen, and assist in provisional assessment of PTSD symptoms.⁷⁵ The PCL-5 assesses symptoms over the past month, with each item scored on how often an individual has been bothered by symptoms, from zero (not at all) to 4 (extremely). Final summary scores range from zero to 80, with higher scores reflecting a greater presence and severity of PTSD symptoms.⁷⁶



Nearly half of WWP warriors presented with **PTSD symptoms.**



About 7% to 8% of the general population will experience PTSD at some point in their lives. However, PTSD occurs in veterans at a higher rate, with 11% to 23% experiencing PTSD within a given year, and it is even more prevalent among OEF and OIF veterans — it is estimated nearly 1 of 4 OEF and OIF veterans experienced PTSD.^{64, 77}

Overall, WWP warriors had an average PCL-5 score of 32.9, which falls within the range indicating the presence of PTSD symptoms, with 48.6% of all WWP warriors presenting with PTSD symptoms.

⁷⁵A PCL-5 cutoff score between 31 and 33 is used to denote the presence of PTSD.

SELF-DIRECTED VIOLENCE



The CDC defines self-directed violence as anything an individual does intentionally that can cause injury to self, including death.

Veterans are 1.5 times more likely to die by suicide than non-veteran adults, with an estimated 17.2 veteran suicides per day.⁷⁸

To assess suicide risk among WWP warriors, the Columbia-Suicide Severity Rating Scale (C-SSRS) was used to measure suicidal ideation and behavior. The C-SSRS assesses five subtypes of suicidal ideation, five subtypes of suicidal behavior (or suicide attempts), and self-injurious behavior without suicidal intent.⁷⁹ For purposes of this survey, only questions related to suicidal ideation and suicide attempts were asked (omitting questions related to preparatory acts of suicide). Suicidal ideation is defined as any thoughts of suicide and/or the “wish to be dead”; suicidal behavior is defined as preparatory acts of suicide and suicidal attempts.⁷⁹

SUICIDAL THOUGHTS AND BEHAVIOR

24.8%
of WWP warriors

have had suicidal thoughts in the past 12 months. Of warriors who reported suicidal thoughts, 69.7% reported having them in the past two weeks

48.2%
of WWP warriors

reported at least one instance of suicidal ideation in their lifetimes

15.5%
of WWP warriors

reported attempting suicide at least once in their lifetimes (suicidal behavior)



During the survey administration period, survey responses were scanned each morning to identify any warriors who indicated that they might be in distress or in need of WWP services. These cases were shared with WWP through a daily secure file transfer protocol. WWP staff then reached out to warriors to offer support and connect them with any programs or services needed.



Nearly 1 in 4 WWP warriors have had suicidal thoughts in the past 12 months. Of warriors who reported suicidal thoughts, 69.7% reported having them in the past two weeks.

SUICIDE ATTEMPTS

Average number of attempts by time period, relative to military service:

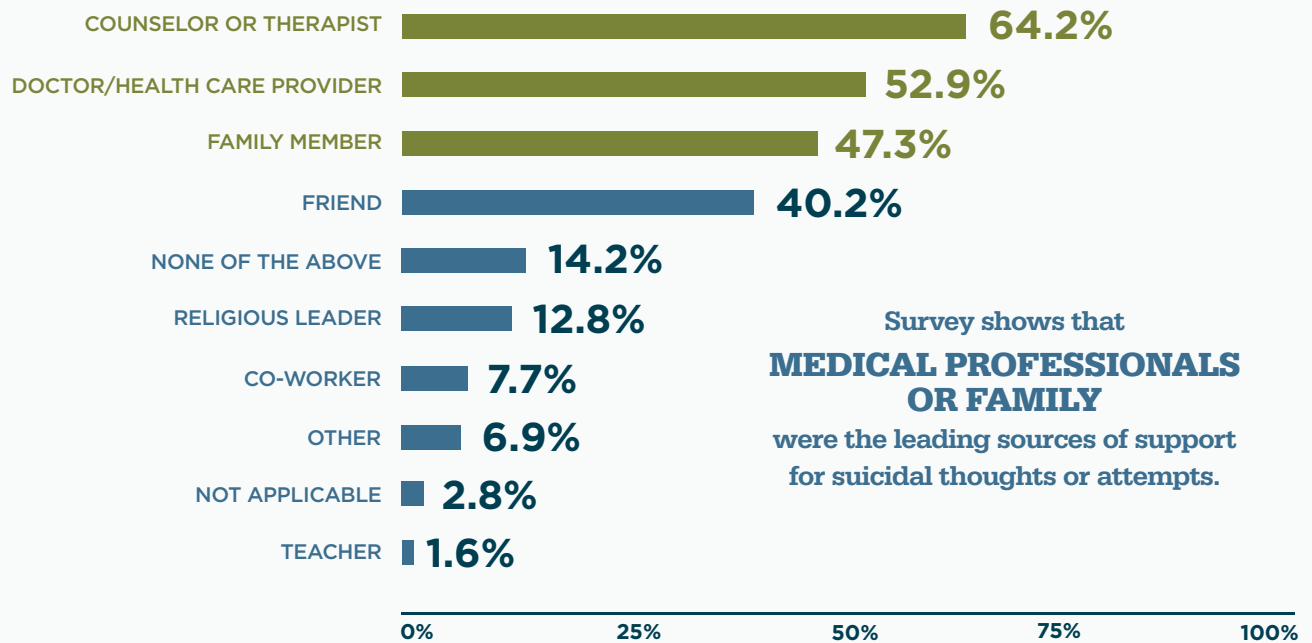
- Before the military, average of less than one attempt (ranging from zero to five)
- During military service, average of one attempt (ranging from zero to 15)
- After military service, average of two attempts (ranging from zero to 23)

RESOURCES USED FOR SUICIDALITY

The survey asked warriors who they talk to about suicidal thoughts or attempts. Medical professionals (counselors, therapists, doctors, and health care providers) were the most common, followed, by family members and friends.

FIGURE 29. RESOURCES USED FOR SUICIDALITY: WWP WARRIORS

Have you talked with any of the following people about suicidal thoughts or attempts? (Choose all that apply.)





ACCESS TO HEALTH CARE

WOUNDED WARRIOR
BILL GEIGER



ACCESS TO HEALTH CARE

Access to health care is critical to health and wellness, as it relates to the availability, affordability, and accessibility of treatment for physical and mental health needs. Limited or delayed access to needed care can result in undiagnosed illness, exacerbation of symptoms, or increased utilization of emergency services and increased health costs.⁸⁰⁻⁸²

Access to health care is about more than someone’s ability to use personal health services; it’s about everything that facilitates or impedes visiting a medical care provider and obtaining the right services.⁸³ Factors that have been found to impede access to care include geographic location, financial status, stigma or shame, lack of insurance coverage, and language barriers.^{80, 81, 84} Conversely, adequate insurance coverage, affordable care, health literacy, and the ability for specific populations to get care for unique health needs have been found to facilitate greater access to care.

HEALTH CARE COVERAGE

Availability and access to health insurance coverage, utilization of services, and quality services are critical to the effective and efficient access to care.⁸⁵

WWP warriors most frequently cited VA Health Care (90%) or TRICARE (49.4%) as their form of health care coverage, with 87.9% indicating they sought VA health care services since separating from active duty.

TABLE 14. HEALTH CARE COVERAGE: WWP WARRIORS

Health care coverage reported by WWP warriors.

HEALTH CARE COVERAGE	PERCENTAGE OF WWP WARRIORS
VA HEALTH CARE	90.0%
TRICARE OR OTHER MILITARY HEALTH CARE	49.4%
EMPLOYMENT-BASED COVERAGE	28.0%
MEDICARE	13.8%
MEDICAID	8.4%
DIRECTLY PURCHASED HEALTH CARE	4.8%
OTHER	1.8%
INDIAN HEALTH SERVICE	0.8%

Note: Percentages do not total 100%, as warriors were asked to choose all that apply.

HEALTH CARE PROVIDERS

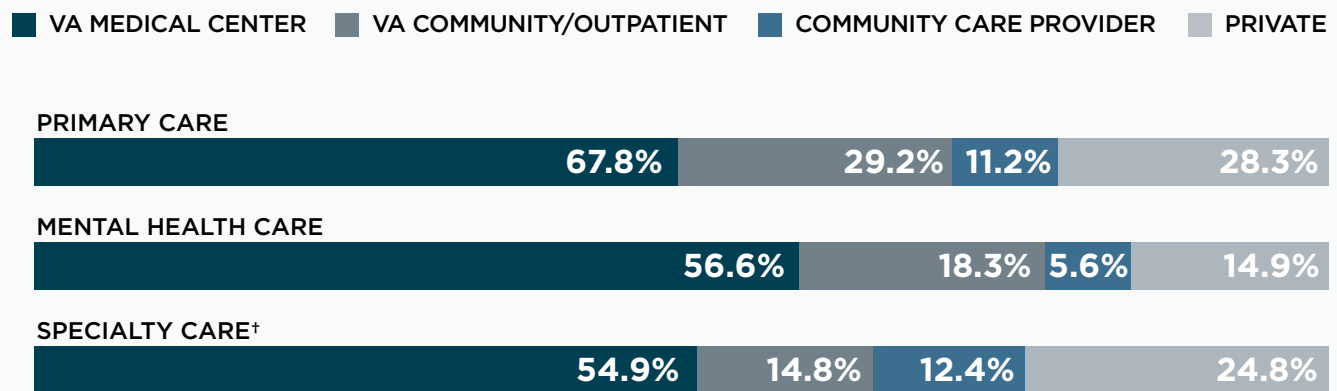
WWP warriors predominantly use VA Medical Centers for primary (68%), mental health (57%), and specialty care (55%).

There are four common health care providers used among veterans:

- VA Medical Centers provide a wide range of hospital-based services through the VA, such as surgery, critical care, mental health, pharmacy, and physical therapy.
- VA Community-Based Outpatient Clinics aim to make access easier by providing common outpatient services, including health and wellness visits in clinics outside of the larger medical centers.
- Community Care Network Provider refers to care that is received from a provider in the warrior's community but paid for by the VA (formerly known as the Choice Program).
- Private Provider is a health care provider outside of the VA that provides direct services to the public.

FIGURE 30. WHERE WWP WARRIORS RECEIVE CARE

Where warriors receive primary, mental health, and specialty care.†



†Specialty care: e.g., cardiologist, endocrinologist, gastroenterologist.

Note: Percentages do not total 100%, as warriors were asked to choose all that apply.

HEALTH CARE SERVICES

Since separating from active duty, 87.9% of WWP warriors have sought to use VA health care services, with 70.9% also reporting use of non-VA health care services.

TABLE 15. REASONS WWP WARRIORS USE VA HEALTH CARE SERVICES

Among WWP warriors who received VA health care services, main reasons why they use the VA.

REASON FOR USING THE VA	PERCENTAGE OF WWP WARRIORS WHO RECEIVED VA HEALTH CARE SERVICES
ROUTINE HEALTH CARE	84.3%
PRESCRIPTIONS	72.8%
MENTAL HEALTH CARE	69.4%
SPECIALTY CARE	58.2%
DENTAL CARE	34.9%
TBI, SCI, PROSTHETICS CARE [†]	30.0%
OTHER	17.1%
TOXIC EXPOSURE CARE	8.9%
MST CARE [†]	6.6%
HOME HEALTH CARE	3.7%
NURSING HOME CARE	1.1%

[†]TBI: traumatic brain injury; SCI: spinal cord injury; MST: military sexual trauma.

Note: Percentages do not total 100%, as warriors were asked to choose all that apply.

TABLE 16. REASONS WWP WARRIORS DO NOT USE VA HEALTH CARE SERVICES

Among WWP warriors who have never used VA health care services, reasons why they do not use the VA.

REASON FOR NOT USING THE VA	PERCENTAGE OF WWP WARRIORS WHO NEVER RECEIVED VA HEALTH CARE SERVICES
PREFER TO USE OTHER HEALTH CARE COVERAGE	53.8%
TOO MUCH TROUBLE OR RED TAPE	28.8%
VA HEALTH CARE SERVICE LOCATIONS NOT CONVENIENT	20.9%
APPOINTMENTS NOT AVAILABLE WHEN I NEED THEM	19.4%
OTHER	18.6%
CONCERNS ABOUT QUALITY OF CARE	17.7%
I DO NOT TRUST THE VA	16.1%
DON'T KNOW IF ELIGIBLE	13.9%
I DON'T FEEL WELCOME AT THE VA	12.4%
VA DOES NOT PROVIDE SERVICES I NEED	6.3%

Note: Percentages do not total 100%, as warriors were asked to choose all that apply.

BARRIERS TO CARE

The survey asked warriors about their ease and motivation for accessing care to address their physical and mental health needs — 41.3% indicated they had difficulty or put off getting needed care for physical injuries or problems, while 19.8% indicated they had difficulty or put off getting needed care for mental health problems.

BARRIERS TO PHYSICAL CARE

Difficulty accessing care or delays in care for physical injuries or health problems can negatively impact treatment and recovery from injuries. In contrast, the availability and access to treatment can mitigate experiences or further complications from physical injuries or health problems.⁸⁶ There is limited research on the impact of barriers to physical health care on long-term outcomes for veterans. Further understanding these barriers, specifically among WWP warriors, sheds light on areas of opportunity and ways in which WWP can support warriors in getting the care they need.



About 2 in 5 WWP warriors reported that they have, at some point, **experienced difficulty or delays in getting care for their physical injuries or problems.**

Top three barriers of those reporting difficulty getting health care needed for physical injuries or problems:

- 66.6% difficulty scheduling appointments with provider
- 60.3% delays or cancellation in treatment
- 55.6% lack of availability in VA specialty clinic

BARRIERS TO MENTAL HEALTH CARE

For health care treatment to be successful, understanding barriers to mental health care utilization is essential to promote engagement of mental health treatment among those who need it. Delaying or discouraging help-seeking behaviors, poorer quality care, and suboptimal patient-provider relationships are all forms of barriers that create challenges in receiving the care individuals need.⁸⁴ Understanding these specific barriers to care is critical, as WWP programs aim to help warriors overcome them and get the care they need.



About 1 in 5 WWP warriors reported that they have, at some point, **experienced difficulty or delays in getting or continuing professional care* for a mental health problem.**

**Professional care includes care provided by a general practitioner (family doctor), a member of a community mental health team (e.g., care coordinator, mental health nurse, or mental health social worker), a psychiatrist, a counselor, a psychologist, or a psychotherapist.*

The 2021 survey included the Barriers to Access to Care Evaluation (BACE-3)* to better understand barriers to mental health care among the WWP warrior population. The most commonly reported barriers to mental health care are categorized as attitudinal, followed by stigma-related barriers and instrumental barriers.



The BACE-3 explores three barriers — attitudinal, stigma, and instrumental — and measures the extent to which these barriers have impeded initial access and continued services for mental health needs.⁸⁷

Attitudinal barriers are behaviors, perceptions, and assumptions that prevent or discourage individuals from seeking help or treatment and often result in ignoring the issues or problems they experience. Of WWP warriors who reported difficulty getting care:

78.9%

“I dislike talking about my feelings, emotions, or thoughts.”

78.4%

“I want to solve the problem on my own.”

76.3%

“I have had previous bad experiences with professional mental health care.”

Stigma barriers are feelings of disgrace around mental health care services or the need for them. Of WWP warriors who reported difficulty getting care:

66.2%

“I would feel embarrassed or ashamed.”

64.2%

“I am concerned that I might be seen as weak.”

59.4%

“I am concerned that I might be seen as crazy.”

Instrumental barriers refer to lacking the means to obtain services, such as financial or systematic impediments to pursuing or obtaining mental health care or treatment. Of WWP warriors who reported difficulty getting care:

59.4%

“I am unsure where to get professional care.”

45.3%

“I have difficulty affording the care, financially.”

45.1%

“I have difficulty taking time off work.”

**BACE-3 is only applicable to those who have ever been stopped or delayed from getting, or continuing with, professional care for a mental health problem. Professional care includes care from staff, such as a general practitioner (family doctor), member of a community mental health team (e.g., care coordinator, mental health nurse, or mental health social worker), psychiatrist, counselor, psychologist, or psychotherapist.*

TELEHEALTH

Distant or remote areas with insufficient access to health care providers or services strongly benefit from using telephone, videoconferencing, and internet-based telemedicine.^{88, 89}

Research has also shown that telemedicine is a cost-effective option for health care, with improved satisfaction in telemedicine services used specifically for mental health services.⁹⁰

Nearly 7 in 10 WWP warriors have utilized telehealth in the past 12 months. Of them, **81.4%** reported being satisfied with the services they received.

In the past 12 months, has a provider offered you a telehealth appointment?

- **67%** “Yes, I was offered a telehealth appointment and scheduled one.”
- **21.2%** “No, I was not offered a telehealth appointment.”
- **11.8%** “Yes, I was offered a telehealth appointment but did not schedule one.”

TELEHEALTH SATISFACTION



Of WWP warriors, females are more likely to utilize telehealth services than males. Of female warriors, 73.8% reported they were offered and scheduled a telehealth appointment in the past 12 months, compared with 65.6% of male warriors.

The majority of warriors who were offered and scheduled a telehealth appointment were satisfied with the services they received:

- 35.1% were very satisfied
- 46.3% were somewhat satisfied
- 11.6% were somewhat dissatisfied
- 7.1% were very dissatisfied

WOMEN'S HEALTH

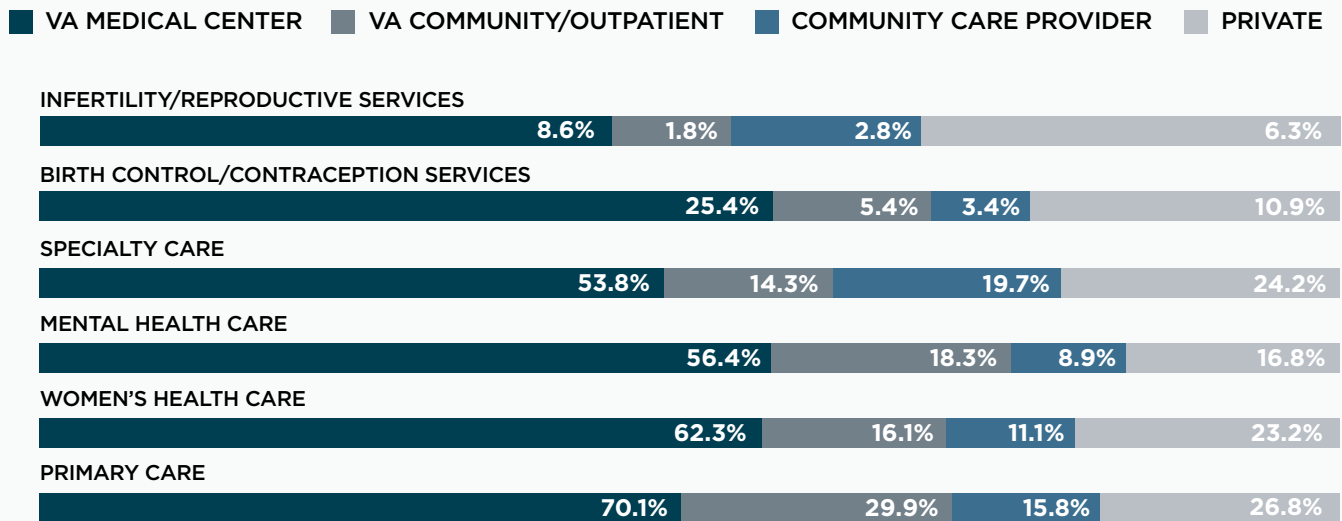
Women make up the fastest-growing segment of the veteran population, with estimates suggesting that the percentage of women veterans would grow by about 7% from 2013 to 2043.⁹¹ Previous research has also shown that women are more likely to suffer from barriers to care and to underutilize VA health care relative to men.^{92, 93}

VA WOMEN'S HEALTH SERVICES

WWP women warriors predominantly use VA Medical Centers for all health care services, with private care being the second most frequently cited service provider for women's health care, specialty care, birth control and contraceptive services, and infertility or reproductive services. WWP women warriors utilize private care providers for infertility or reproductive services at a higher proportion than other types of care. The VA's limits on reproductive options based on injury and/or marital status may contribute to higher utilization of private care specific to infertility or reproductive services.

FIGURE 31. WHERE WOMEN WWP WARRIORS RECEIVE CARE

Where women WWP warriors receive different types of care.



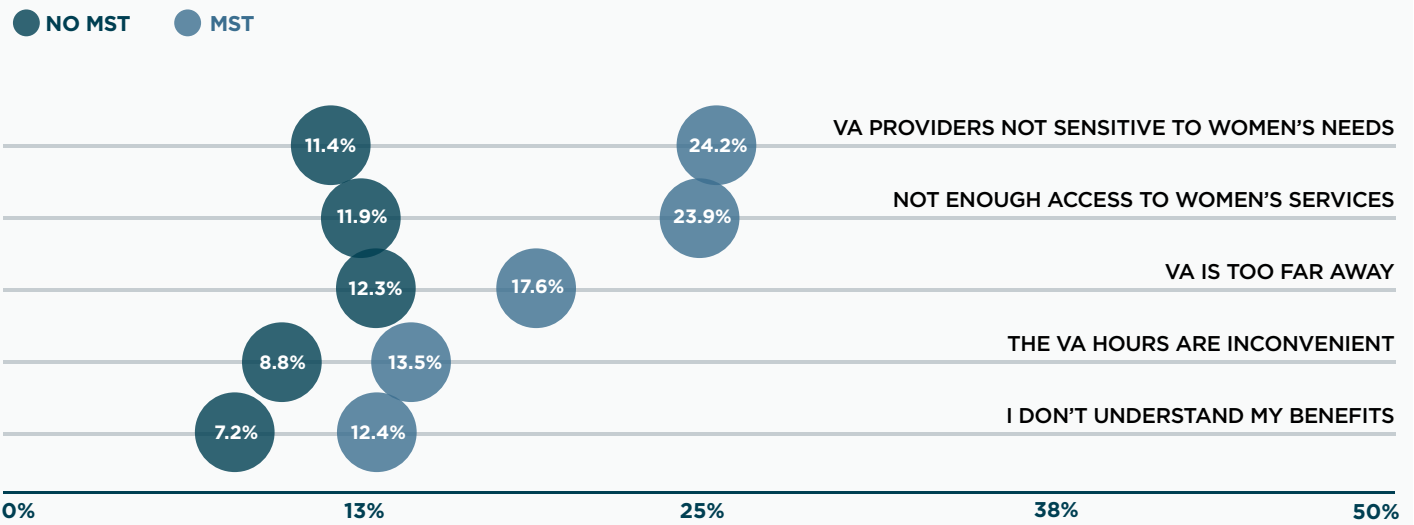
BARRIERS TO USING VA CARE

The most common barriers to VA care cited by WWP women warriors were “not enough access to women’s services” (20%), “lack of sensitivity to women’s needs” (19.7%), and “VA is too far away” (15.6%).

WWP women warriors who are survivors of MST cited all barriers more frequently and cited “lack of sensitivity to women’s needs” and “not enough access to women’s services” twice as often as those who’ve not experienced MST.

FIGURE 32. BARRIERS TO CARE AND MST: WOMEN WWP WARRIORS

Top five barriers to care among WWP women warriors who are and are not MST survivors.

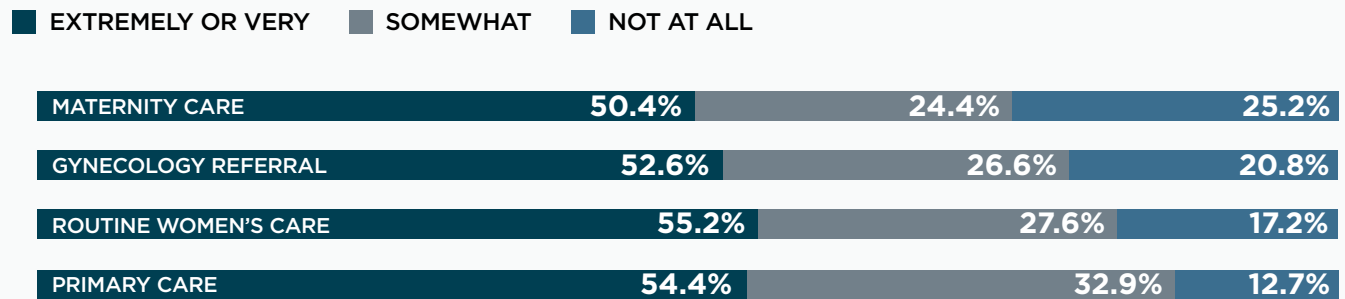


WOMEN'S HEALTH CARE COORDINATION

When asked about the VA’s helpfulness in coordinating different types of women’s care, most WWP women warriors reported that the VA was “extremely” or “very” helpful in all areas. Areas of opportunity for improvement included primary care and routine women’s care.






FIGURE 33. HELPFULNESS OF THE VA IN COORDINATING CARE: WWP WARRIORS

How helpful was the VA in coordinating care? (Choose all that apply.)






SATISFACTION WITH VA WOMEN'S HEALTH SERVICES

Of those who indicated they used the VA for women's health services (79.4% of women WWP warriors):

-  33.8% were very satisfied
-  25.7% were somewhat satisfied
-  16% were neither satisfied nor dissatisfied
-  10.3% were somewhat dissatisfied
-  14.3% were very dissatisfied

ACCESS TO CONTRACEPTION

Top three barriers reported by women WWP warriors in accessing contraception:

-  39.6% couldn't get an appointment with a doctor, clinic, or pharmacy soon enough
-  26% couldn't get through to a doctor, clinic, or pharmacy on the telephone
-  9.4% were treated unfairly — of those who indicated they were treated unfairly, these were the top three reasons:
 - 12.4% because of race/ethnicity
 - 3.3% because of my sexual activity or lifestyle
 - 3.1% because of my sexual orientation

.....

6.4% of female WWP warriors indicated they delayed or **had trouble getting birth control.**

.....

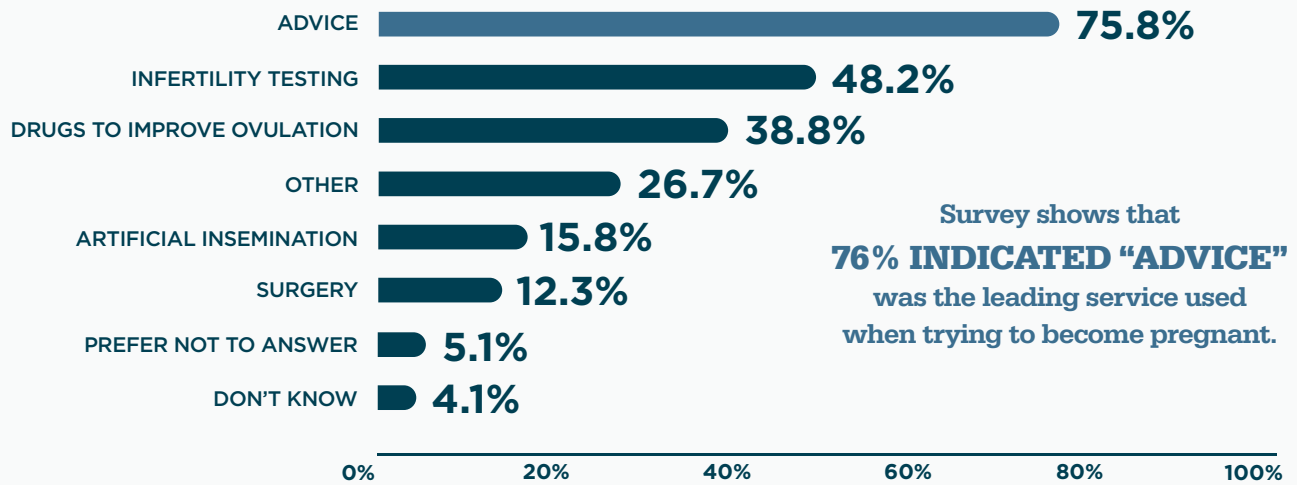
INFERTILITY AND REPRODUCTIVE HEALTH SERVICES

Infertility and reproductive health services are crucial to the unique needs of women warriors. Previous research has shown that 15.8% of women OEF/OIF veterans reported infertility, and women service members were three times more likely to have infertility issues compared with the general U.S. women population.⁹⁴

Among women WWP warriors, 14.7% indicated they had, at some point, consulted a doctor or medical care provider for reproductive or infertility services, of which 48.2% sought infertility testing.

FIGURE 34. SERVICES USED FOR PREGNANCY ASSISTANCE: WOMEN WWP WARRIORS

Which of the following services have you used to help become pregnant? (Choose all that apply.)





EMPLOYMENT

WOUNDED WARRIOR
RICHARD DORR

» EMPLOYMENT

Employment provides financial security, which contributes to financial well-being and can impact mental and physical health.^{95, 96} Mental and/or physical injuries acquired during military service and the challenges of transferring military skills to civilian careers often make it difficult for veterans to obtain stable employment.^{97, 98}

To better understand employment and its associated factors among the WWP warrior population, the 2021 survey included questions on topics such as barriers to employment, wages, and professional fulfillment. These topics help paint a clearer picture of warriors in and out of the labor force and their motivators, barriers, and overall satisfaction.

LABOR FORCE

The labor force consists of those who are employed and those who are unemployed but seeking employment.

Definitions:

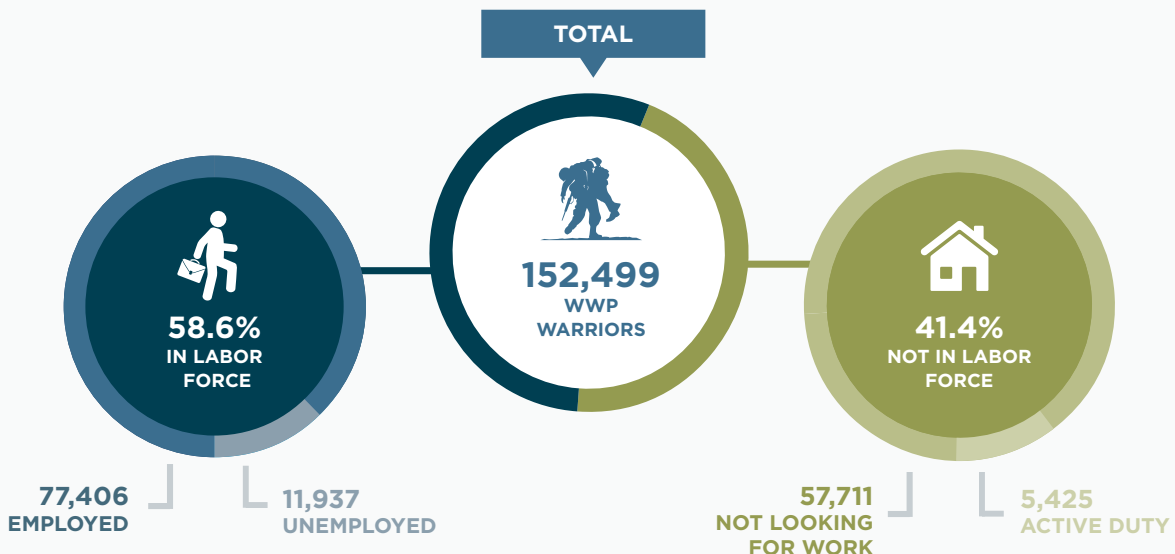
Labor force: includes all WWP warriors classified as employed or unemployed

Unemployed: includes WWP warriors who had no employment but were looking for work in the previous four weeks — the unemployment rate represents the number unemployed as a percentage of the labor force

Employed: includes WWP warriors currently working full time or part time or having their own business

FIGURE 35. LABOR FORCE BREAKDOWN: WWP WARRIORS

Breakdown of WWP warriors who are and are not in the labor force.



LABOR FORCE PARTICIPATION

The WWP warrior labor force participation rate is 58.6%, which is higher than the U.S. general population with disabilities (21.6%) but lower than post-9/11 veterans (77.4%) and the U.S. general population (61.7%).

UNEMPLOYMENT



The WWP warrior unemployment rate is 13.4%.

The WWP warrior unemployment rate (13.4%) is the highest compared with the post-9/11 veteran population (2.1%), all veterans (3.2%), the U.S. general population (5.2%), and the U.S. general population with a disability (10.9%).*

Definitions:

Unemployment rate: WWP warriors who had no employment but were looking for work in the previous four weeks as a portion of all WWP Warriors in the labor force.

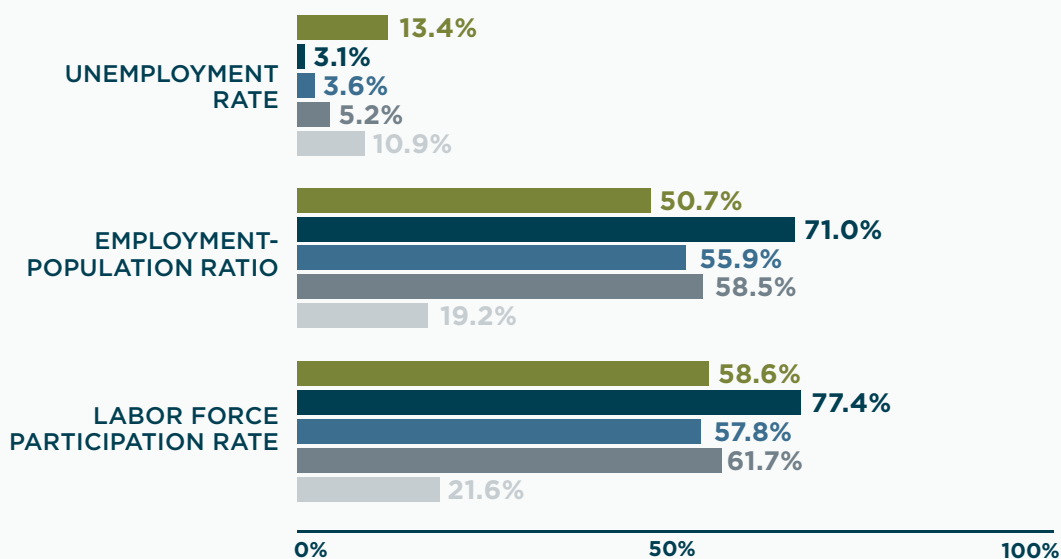
Employment-population ratio: WWP warriors currently working full time or part-time or having their own business as a portion of the total WWP warrior population.

Labor force participation rate: WWP warriors in the labor force—defined as the sum of employed and unemployed persons—as a portion of the total warrior population.

FIGURE 36. UNEMPLOYMENT, EMPLOYMENT, AND LABOR FORCE PARTICIPATION: COMPARISON OF WWP WARRIORS AND U.S. POPULATIONS

■ WWP WARRIORS
 ■ U.S. POST-9/11 VETERANS
 ■ U.S. VETERANS (ALL)

■ U.S. GENERAL POPULATION
 ■ U.S. GENERAL POPULATION WITH DISABILITY



Data Source: Wounded Warrior Project³ and U.S. Bureau of Labor Statistics.⁹⁹

*Data for the Annual Warrior Survey and the U.S. general population was pulled between comparable time frames during 2021.

BARRIERS TO EMPLOYMENT

Despite greater participation in the labor force, WWP warriors are still experiencing vulnerability in the labor market compared with other populations. Unemployed warriors spend an average of 24 weeks looking for work. Understanding barriers and gaps that contribute to the time it takes to find a job could aid in better serving warriors and connecting them with the resources and services they need.

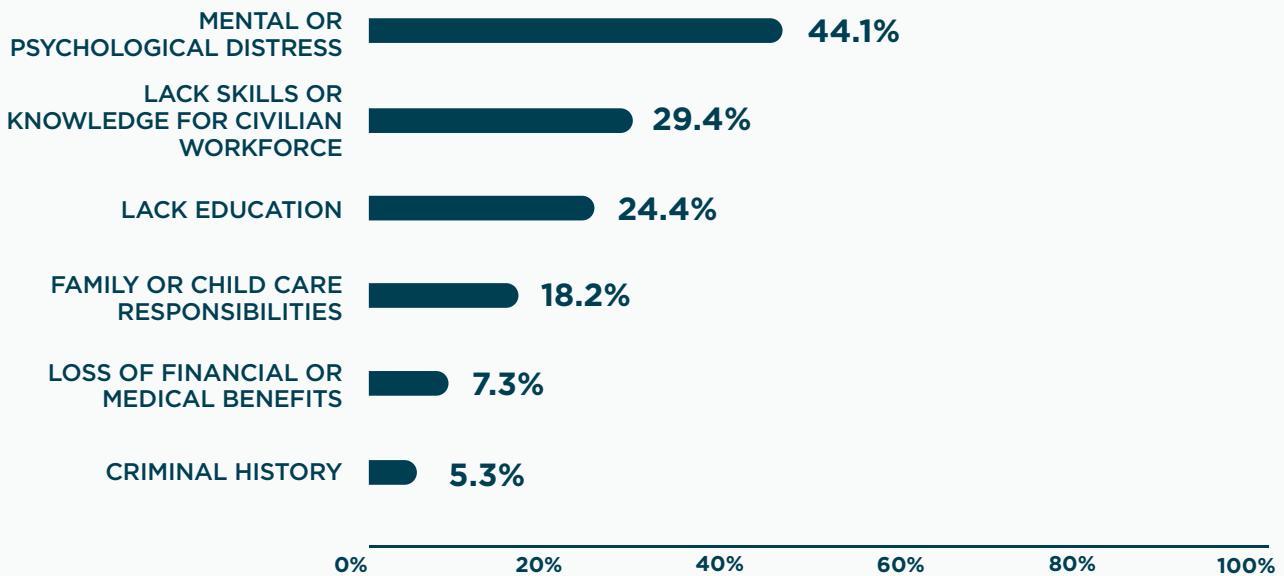
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WWP warriors who are unemployed or not looking for work reported that the **most common barriers to employment** are related to mental or psychological distress.

.....

FIGURE 37. BARRIERS TO EMPLOYMENT REPORTED BY WWP WARRIORS WHO ARE UNEMPLOYED

Which of the following factors make it difficult for you to obtain a job? (Choose all that apply.)

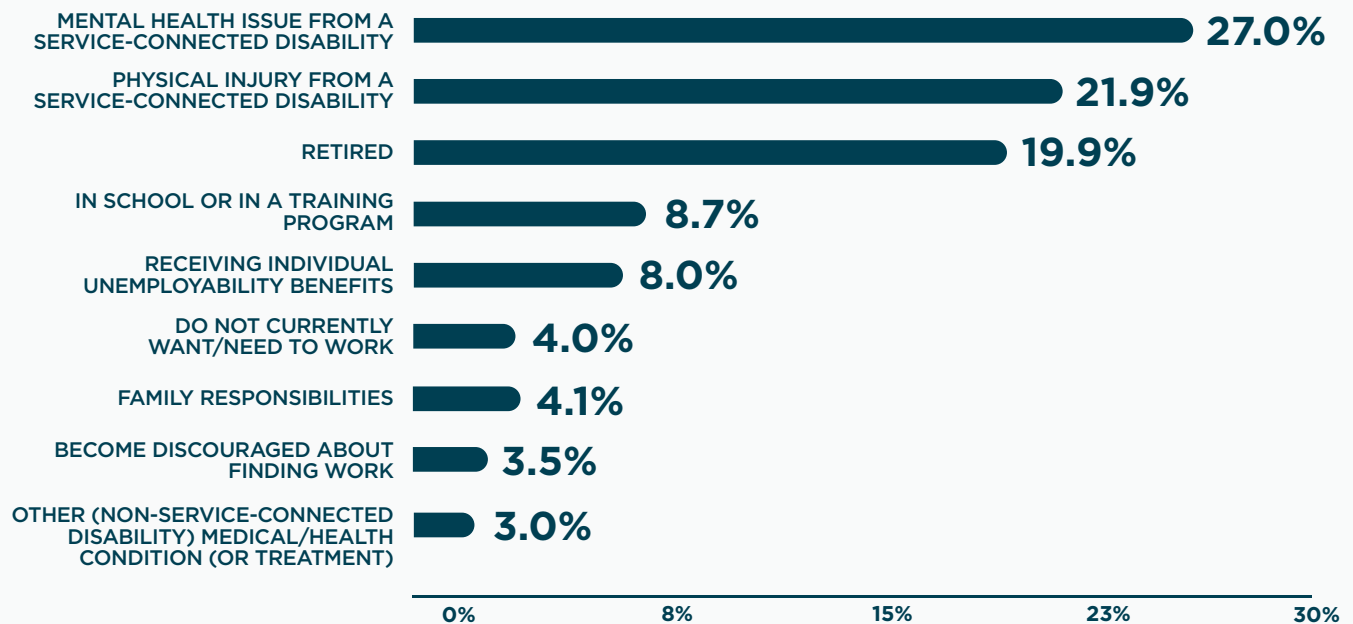


WARRIORS NOT IN THE LABOR FORCE

About two in five WWP warriors are not in the labor force (41.4%), and of them, 37.9% are not looking for work. These warriors most commonly reported that mental health or physical injuries from a service-connected disability prevented them from working (27% and 21.9%, respectively), followed by being retired (19.9%) or being in a school or training program (8.7%).

FIGURE 38. REASONS WWP WARRIORS ARE NOT IN THE LABOR FORCE

Reason not looking for work among WWP warriors not in the labor market.

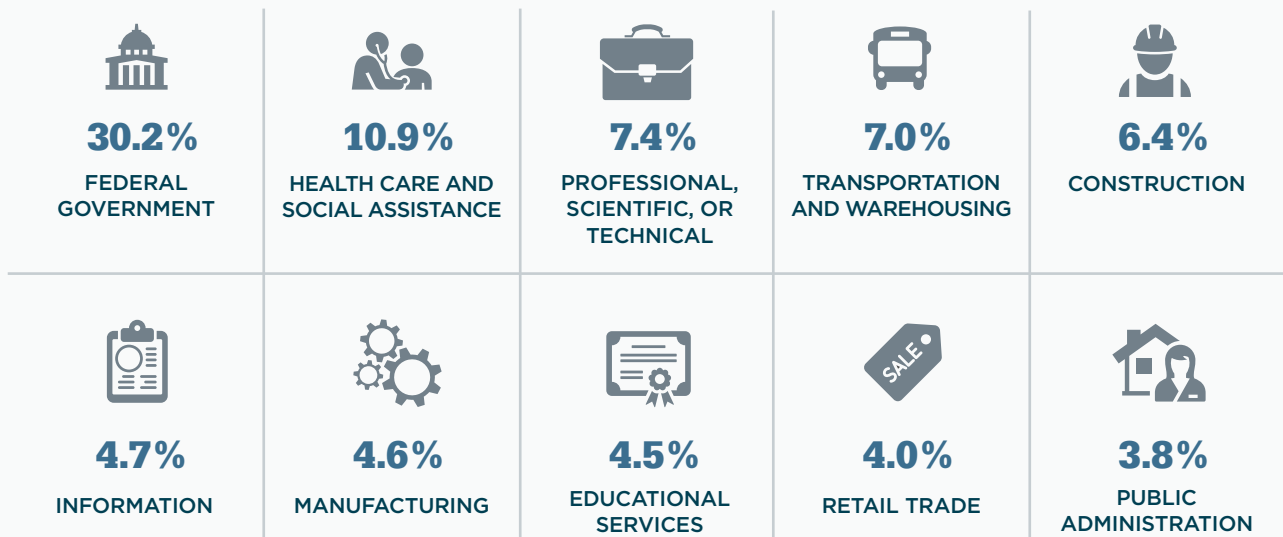


INDUSTRIES OF EMPLOYMENT

Warriors are employed across a diverse range of industries, including government, health care, construction, and education (Figure 39). The largest percentage of employed WWP warriors work in the federal government (30.2%); in health care and social assistance (10.9%); in the professional, scientific, or technical fields (7.4%); and in transportation and warehousing (7%). The percentage of warriors working in the federal government is higher than what is seen within the U.S. general veteran and post-9/11 veteran populations, in which 11.4% and 15.7% work in the federal government, respectively.¹⁰⁰

FIGURE 39. TOP 10 INDUSTRIES IN WHICH WWP WARRIORS ARE EMPLOYED

Breakdown of top 10 most common industries WWP warriors currently are employed in.



WAGES

For most workers, wages are most likely to be a primary source of income. Wages can provide households with economic stability to access resources that are essential to meet basic needs (e.g., ability to pay household bills or meet monthly expenses).¹⁰¹

The median weekly income for WWP warriors employed full time was \$1,000, and for warriors working part time, the weekly income was \$300. The median weekly income for WWP warriors employed full time and part time is comparable to the U.S. general population (Table 17).

When broken down by sex, male WWP warriors employed full time earned, on average, \$100 more weekly than female WWP warriors employed full time; males working part time earned \$4 more weekly than females working part time.

TABLE 17. WEEKLY WAGES: COMPARISON OF WWP WARRIORS AND U.S. GENERAL POPULATION

Median weekly wages for full- and part-time employed WWP warriors and the U.S. general population.

		WWP WARRIORS CURRENT WEEKLY WAGE (MEDIAN)	U.S. GENERAL POPULATION (MEDIAN)
EMPLOYED FULL TIME	Overall	\$1,000	\$1,001
	Female	\$900	\$916
	Male	\$1,000	\$1,100
EMPLOYED PART TIME	Overall	\$300	\$324
	Female	\$296	\$330
	Male	\$300	\$317

Data Source: Wounded Warrior Project³ and U.S. Bureau of Labor Statistics.¹⁰²

EMPLOYMENT FULFILLMENT

Professional fulfillment is an important aspect of well-being and understanding how fulfilled warriors are with work. Studies have shown that job fulfillment is correlated with mental health and depression.^{103, 104}

To quantify the presence and degree of professional fulfillment, the Professional Fulfillment Index (PFI) was used to assess the degree of intrinsic positive reward that WWP warriors perceived as being gained through their work. The PFI includes three subscales — professional fulfillment, work exhaustion, and interpersonal disengagement — for a total of 16 items. Response options are on a five-point Likert scale of zero (not at all true) to four (completely true).¹⁰⁵

For purposes of this survey, only six items related to the professional fulfillment subscale were asked of WWP warriors in the labor market. The final overall PFI score, and each subscale, is presented as the average of all responses, with a final score ranging from zero to four. Summary PFI scores can be dichotomized at a cut point of three in reporting insufficient (zero to two) and significant (three to four) professional fulfillment. Scores greater than two are indicative of professional fulfillment.


Overall, the PFI score for WWP warriors who were employed (full time and part time) was two, indicating insufficient professional fulfillment.

Veterans possess different skills and expertise compared with non-veteran workers. One approach for improving professional fulfillment is for employers to offer veteran-specific resources to their employees. The survey asked warriors if their employers offered a resource group for veterans or a veteran mentorship program, with 30.9% reporting that their current employers did.



WWP warriors employed by companies offering a resource group or a veteran mentorship program **had higher scores of professional fulfillment** compared with those employed by companies without such programs.

WWP warriors employed by companies offering a resource group or a veteran mentorship program had a statistically significant higher mean PFI score of 2.4, indicating professional fulfillment, compared with those employed by companies without a resource group or a veteran mentorship program, who had a PFI score of 1.9, indicating no professional fulfillment.*



“Unfortunately, in too many instances, veterans spend months looking for work after separating from the military. Wounded Warrior Project helps bridge that gap and matches veterans with employers.”

— WOUNDED WARRIOR
BILL JONES

¹⁴ Independent t-test comparing means, $p < .0001$.



FINANCIAL WELLNESS

WOUNDED WARRIOR
SEAN SANDERS AND HIS WIFE



FINANCIAL WELLNESS

“Financial wellness is a comprehensive, multidimensional concept incorporating financial satisfaction, objective status of financial situation, financial attitudes, and behavior that cannot be assessed through just one measure.”¹⁰⁶ Financial wellness is an important indicator of quality of life, and financial difficulties that result in a lack of money to meet basic needs are associated with major depressive orders, PTSD, and TBI among post-9/11 veterans.¹⁰⁷ Additionally, studies have shown that post-9/11 veterans who report not having enough money to cover basic needs were more likely to have post-deployment adjustment problems, such as criminal arrest, homelessness, substance abuse, suicidal behavior, and aggression.¹⁰⁷

Global fluctuations leading to additional challenges continue to put pressure on household spending, labor demands, and food security.¹⁰⁸

To assess overall financial wellness among the WWP warrior population, the 2021 survey looked at factors including financial well-being, financial strain, poverty, food security, and homelessness. These factors help WWP to better understand the overall picture of financial wellness among warriors and guide programmatic and advocacy efforts to support them.

FINANCIAL WELL-BEING

The InCharge Financial Distress/Financial Well-Being Scale (IFDFW) was used to measure overall financial distress and well-being.

The IFDFW provides self-reported responses to evaluate current financial positions and the state of fiscal issues, specifically related to overall well-being and distress.¹¹⁰ Final scores can be categorized as low (one to four), moderate (five to six), and high (seven to ten) financial well-being.

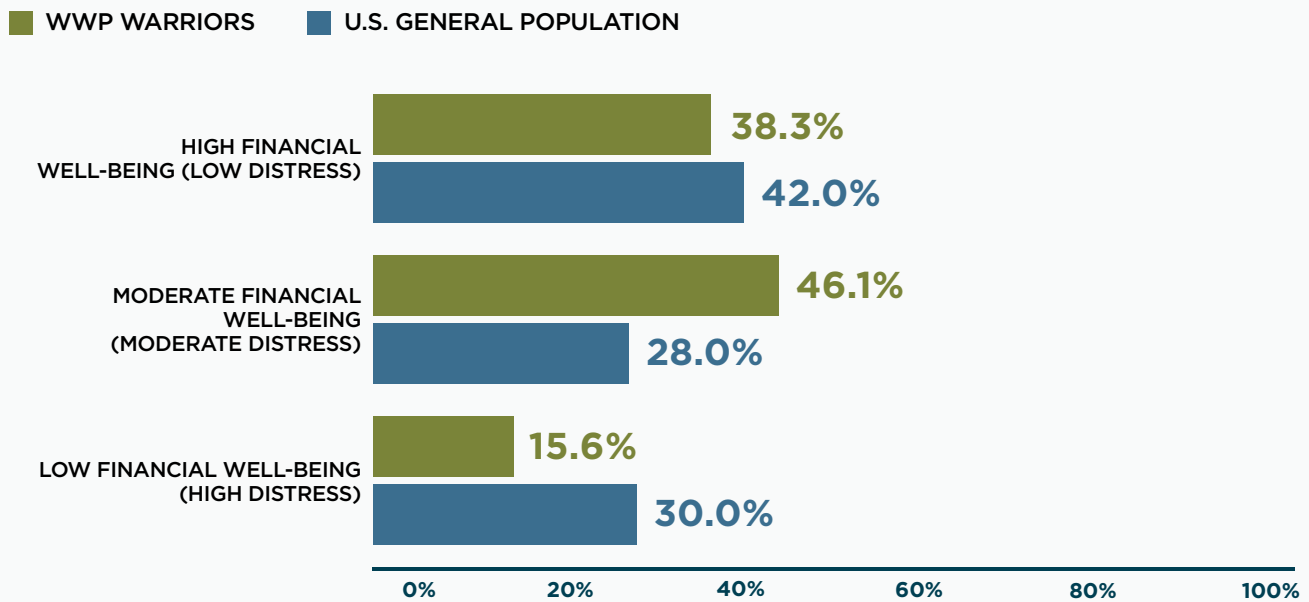
The overall mean score for the WWP warrior population was 5.6, indicating moderate financial distress. This is in line with the U.S. general population’s overall score of 5.7, also indicating moderate financial distress.¹¹⁰



The Consumer Financial Protection Bureau (CFPB) defines financial well-being as a state of being wherein a person can fully meet current and ongoing financial obligations, can feel secure in his or her financial future, and is able to make choices that allow him or her to enjoy life.¹⁰⁹ Individuals can experience financial well-being or lack of it no matter what their level of income is.

FIGURE 40. FINANCIAL WELL-BEING: COMPARISON OF WWP WARRIORS AND U.S. GENERAL POPULATION

Financial well-being among WWP warriors and U.S. general population — low, moderate, and high distress.



Data Source: Wounded Warrior Project³ and Prawitz, Garman.¹⁰

FINANCIAL STRAIN



About 2 in 5 WWP warriors indicated that they, at some point in the past 12 months, **did not have enough money to make ends meet.**

To better understand financial strain, the survey asked warriors about accumulated debt and perceived feelings of financial stress. Financial strain was measured by asking if there was a time in the past year when they felt they did not have enough money to make ends meet (i.e., to pay for rent/mortgage, food, utilities, phone, or other basic needs).

Of WWP warriors, 42% indicated that they, at some point in the past 12 months, did not have enough money to make ends meet.

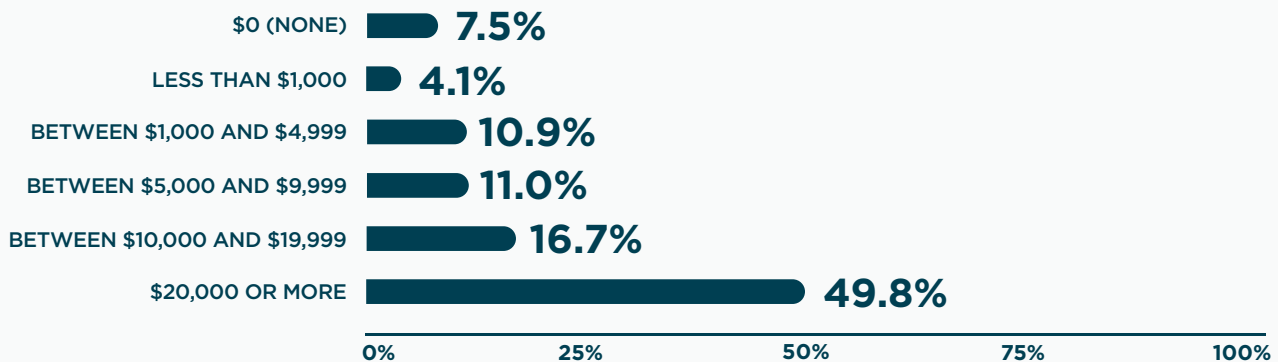
WARRIOR DEBT

Taking on too much debt can place strain on individuals' quality of life and well-being. Unmanageable debt is associated with financial exclusion, family breakdown, and poor physical and mental health.

More than nine in 10 (92.5%) WWP warriors have debt other than mortgage debt, of which nearly half (49.8%) have at least \$20,000 in total debt (excluding mortgages). WWP warriors' overall indebtedness is in line with the U.S. general population, whose average debt (excluding mortgages) was \$38,000 in 2020.¹¹¹

FIGURE 41. DEBT: WWP WARRIORS

Current total amount of outstanding debts (excluding mortgage debt).



POVERTY STATUS

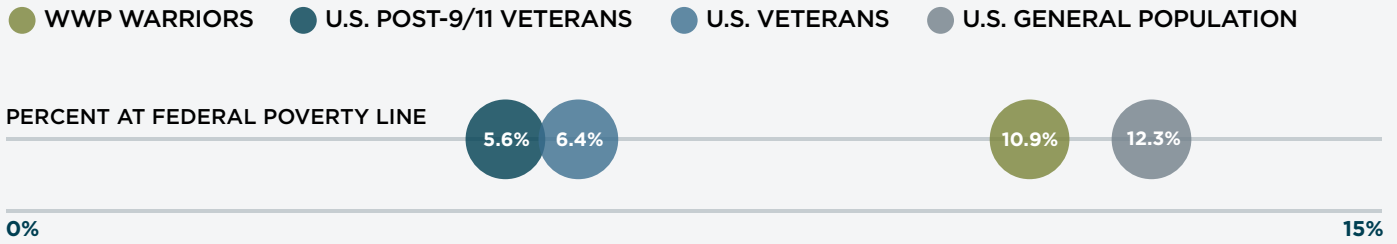


Each year, the U.S. Census Bureau establishes the official set of Federal Poverty Level (FPL) thresholds to evaluate national economic trends and to understand their effect on the well-being of households. The FPL thresholds are the dollar amounts used as “statistical yardsticks” to determine all official population statistics related to poverty.¹⁵ In addition, the FPL thresholds help determine individual eligibility for certain government programs and benefits, such as federal marketplace health insurance, Medicaid, and Children’s Health Insurance Program coverage.^{112, 113}

In relation to the 2021 FPL thresholds, Figure 42 shows the distribution of WWP warrior households, which are based on self-reported household income and family unit size. Nearly one in 10 (10.9%) WWP warrior households are living in poverty, compared with 12.3% of the U.S. general population that were in poverty in 2019.¹¹⁴

About 1 in 10 WWP warrior households live in poverty.

FIGURE 42. FEDERAL POVERTY RATE: COMPARISON OF WWP WARRIORS AND U.S. POPULATIONS



Data Source: Wounded Warrior Project³ and U.S. Census Bureau.⁴

FOOD SECURITY

Food insecurity is a global issue affecting many populations and subgroups. Hunger is defined as the need for food, while food insecurity is when food is not accessible, affordable, or consistently and reliably available.¹¹⁵ The COVID-19 pandemic has increased the prevalence of food insecurity while also highlighting the gaps in continuing to address this issue. The pandemic has further illuminated the issues of food insecurity affecting veterans, their families, and their communities. Food demand has increased by 60% since the pandemic began^{116, 117} and requires local and innovative solutions and policy to support communities and families in need.



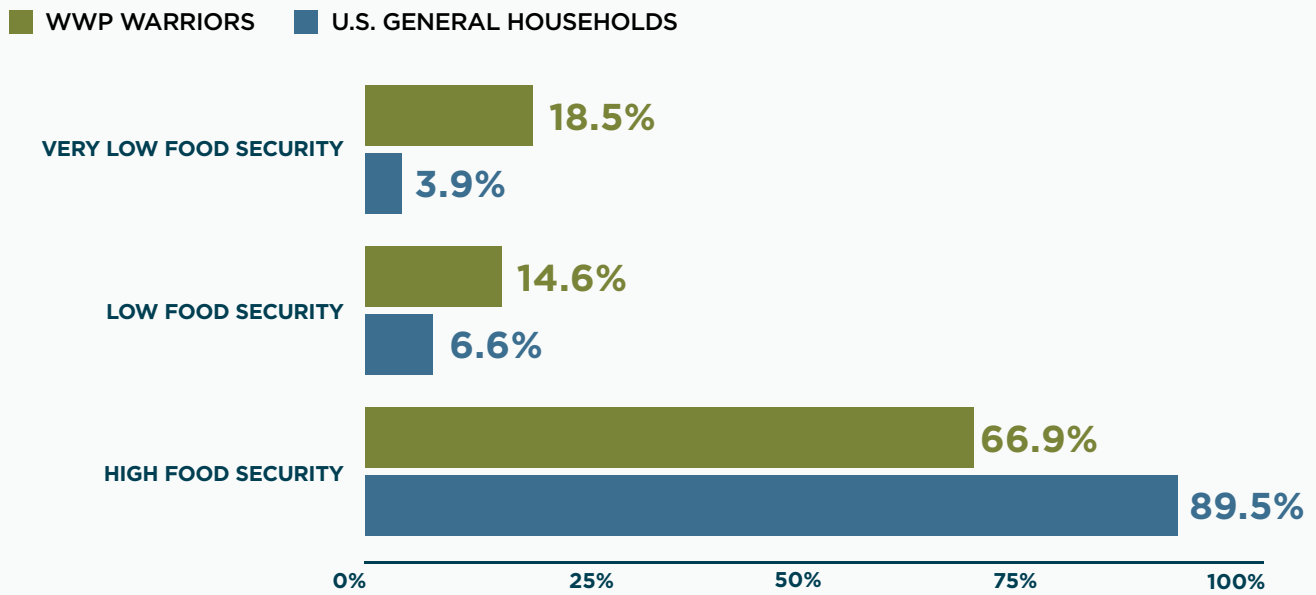
Rates of “low” or “very low” food security are **three times higher among WWP warriors** than among the U.S. general population.

The U.S. Household Food Security Survey (FSS) Module: Six-Item Short Form was used to measure food security levels among WWP warriors. Final summary scores range from zero to six, with higher scores indicating lower food security. FSS scores can be categorized as high/marginal food security (zero to one), low food security (two to four), and very low food security (five to six). Overall scores can be collapsed further into two dichotomous groups of food secure (scores zero to one) and food insecure (score two or more).¹¹⁸

The overall mean score for the WWP warrior population was 1.5, which falls in the middle of food secure and insecure. Warriors have lower rates of high food security (66.9%) compared with households in the U.S. general population (89.5%). About one in three (33.1%) WWP warriors met the threshold for being food insecure compared with 10.5% of U.S. households. This suggests that warriors are more frequently food insecure compared with households in the U.S. general population.

FIGURE 43. FOOD SECURITY: COMPARISON OF WWP WARRIORS AND U.S. GENERAL HOUSEHOLDS

Levels of very low, low, and high food security among WWP warriors and U.S. general households.



Data Source: Wounded Warrior Project³ and U.S. Department of Agriculture.¹⁵

HOMELESSNESS

Financial strain, such as unemployment, debts, lower income, and financial crises, increases the risk of future homelessness.¹¹⁹ Those experiencing homelessness have a high prevalence of chronic and co-occurring health conditions and mental and substance use disorders.¹²⁰



About 1 in 40 WWP warriors indicated some form of homelessness in the past 12 months.

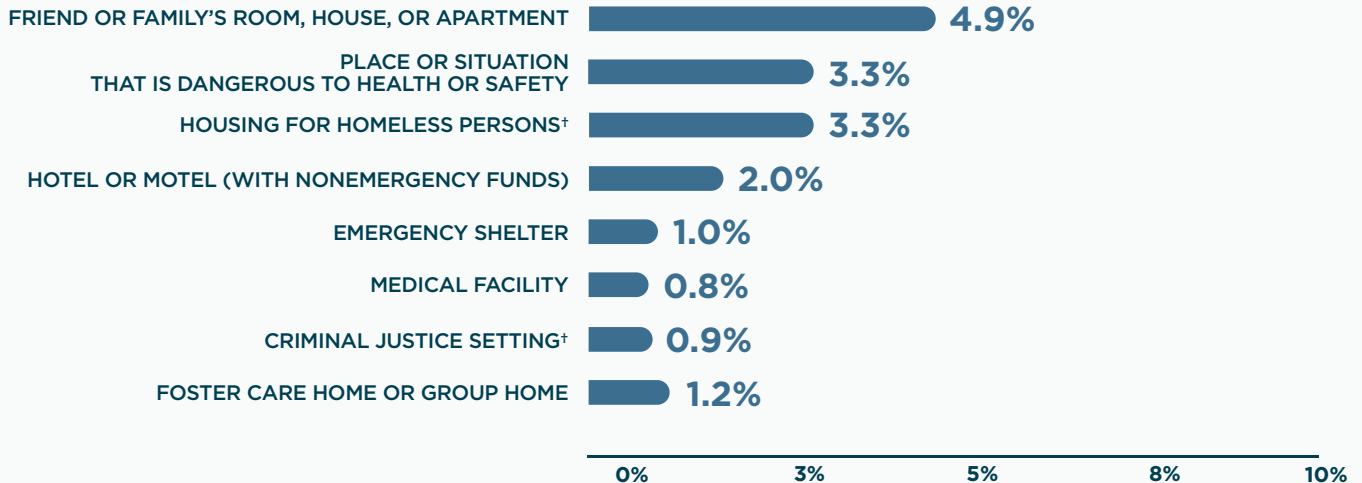
Of those indicating homelessness in the past 12 months, 82.8% indicated they were no longer homeless (slept in a home or apartment they owned or rented within the previous 24 hours).



Homelessness was defined as having received any government housing assistance (e.g., rental assistance vouchers, transitional housing, supportive housing, or participation in a Housing First Program) because they were homeless.

FIGURE 44. HOMELESSNESS AND PLACES SLEPT IN PAST 24 HOURS: WWP WARRIORS

Where WWP warriors who were considered to be homeless in past 12 months slept the previous 24 hours.



*Housing for homeless persons includes permanent and transitional housing; medical facility includes psychiatric hospital, substance abuse facility, or hospital; criminal justice setting includes jail, halfway, or quarter-way house.



CONNECTION

WOUNDED WARRIORS
MICHAEL MATTHEWS (CENTER)
WITH FELLOW VETERANS

» CONNECTION

Definition:

Social connection: an individual's internal sense of belongingness in the social environment.¹²¹

Feeling close and connected to other individuals can improve both physical and mental health and well-being.¹²² Studies have shown that having a higher sense of social connectedness may decrease psychological distress, depression, PTSD, low self-esteem, and suicidal ideation. With the loss of sense of community, identity, and belongingness that is usually provided by the military, social connectedness is key to a successful reintegration of veterans into civilian life.

EMOTIONAL SUPPORT

The perception of emotional support, as one element of social support, refers to how people view the availability of others within their social networks to listen to problems with empathy, care, and understanding. To better understand warriors' perceived emotional support, the National Institutes of Health Toolbox Emotional Support Survey (ESS) was used in this survey. The ESS consists of eight items on a five-point Likert scale ranging from never (one) to always (five). Higher scores reflect more reported support.¹²³

Overall, WWP warriors had an average score of 31.8 for emotional support, which falls below the mean score of the U.S. general population (50).¹²³

The top three areas in which WWP warriors felt high levels of emotional support:

- Having someone who will listen when they need to talk
- Having someone to talk with when they have a bad day
- Having someone they trusted to talk with about their problems

Top three areas in which WWP warriors felt lower levels of emotional support:

- Having someone to turn to for suggestions on how to deal with a problem
- Getting help or advice from others when dealing with a problem
- Having someone who understands their problems

LONELINESS

WWP warriors had an **average loneliness score of 6.1**. This is **much higher** than the average loneliness score of 3.9 in the U.S. general population.¹²⁶

Loneliness, which is different from being alone, is the emotional distress felt when social involvements and relationships are not what an individual wants them to be. Individuals can be alone and not feel lonely — conversely, individuals can be surrounded by people and still feel lonely. Many adults will experience some form of loneliness, with some experiencing chronic loneliness. Loneliness can have a negative impact, leading to physical and emotional health consequences.



Female WWP warriors were **significantly more likely** to report being lonely (70.7%) than males (60.7%).*

Loneliness has been shown to be related to depression and suicidality, obesity, high blood pressure, and poor immune response.^{124, 125} Given the association between loneliness and both physical and mental health, it is important to understand warriors' sense of loneliness.

Loneliness was measured using the Three-Item Loneliness Scale, which measures three dimensions of loneliness: relational connectedness, social connectedness, and perceived isolation. Overall loneliness scores are a sum of all three questions, ranging from three to nine, for which a higher score represents greater loneliness.¹²⁶ Final scores can also be grouped as not lonely (scores three to five) or lonely (scores six to nine).

The average loneliness score (6.1) among WWP warriors falls within the threshold indicating loneliness. When further categorized based on groups, 37.6% are considered not lonely, while the majority, 62.4%, of warriors are lonely.

RESILIENCE

Resilience is an individual's ability to overcome adversity. Resilience was measured using the Connor Davidson Resilience Scale 10-Item (CD-RISC 10). The CD-RISC 10 quantifies the degree of resilience and measures how well an individual is able to endure difficult experiences, such as painful feelings, pressure, illness, change, or failure.¹²⁷ Resilience, as measured by CD-RISC 10, has also been used as a marker of progress during treatment and arose from treating individuals with PTSD and other forms of anxiety.¹²⁷

The final summary resilience score ranges from zero to 40, with higher scores being indicative of greater resiliency. Scores can be further grouped into low (zero to 29), moderate (30 to 36), and high (37 to 40) levels of resilience.¹²⁸

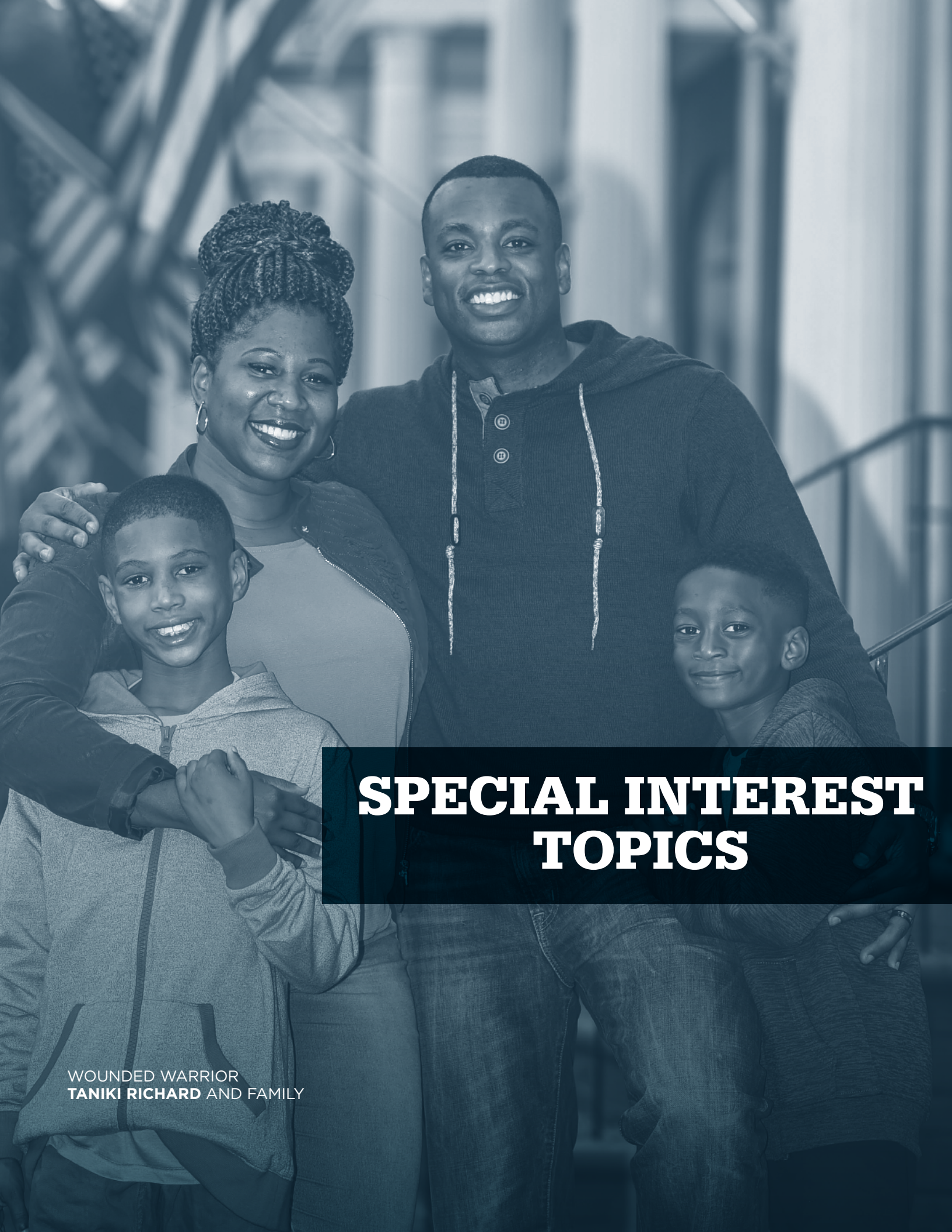
.....
About 3 in 4 warriors had low levels of resilience.

In a community survey of U.S. adults, a mean score of 31.8 (moderate resilience) was obtained for the CD-RISC 10.¹²⁸

WWP warriors have a mean resilience score of 23.5, which falls within low levels of resilience:



*Chi-square test of independence, p<.0001.



SPECIAL INTEREST TOPICS

WOUNDED WARRIOR
TANIKI RICHARD AND FAMILY



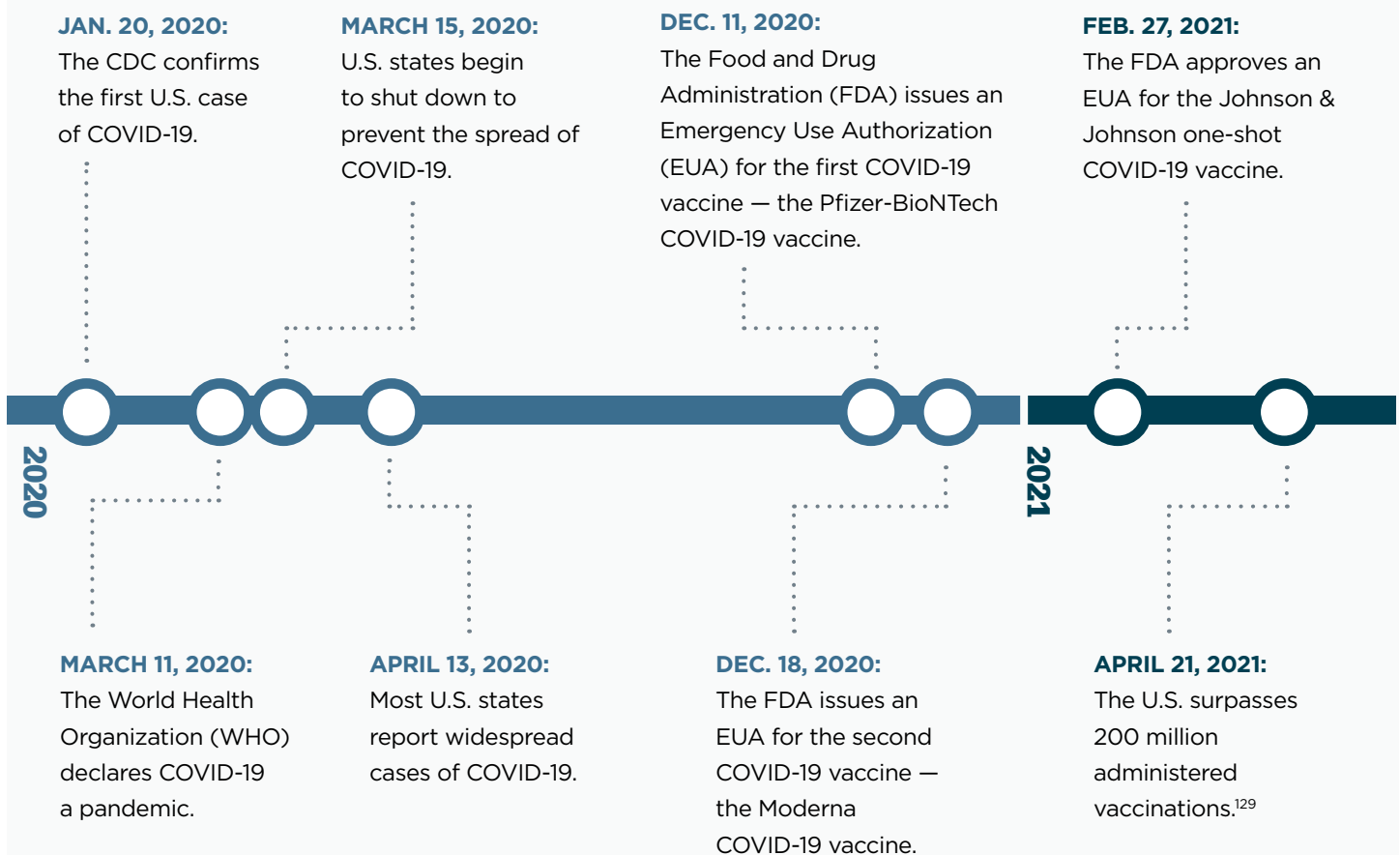
SPECIAL INTEREST TOPICS

In addition to the comprehensive topics explored, WWP has identified two timely topics of special interest to explore in the survey: COVID-19 and gaming. While the pandemic may not be an ever-present issue among veterans, the context of COVID-19 in the present time is critical in assessing the impact of the pandemic on the warrior population.

COVID-19

Following a year with nationwide shutdowns, restrictions on gatherings, and increases in illness and hospitalizations, the COVID-19 era looked different in 2021. With the rollout of the COVID-19 vaccine, the rates of hospitalizations began to decline, as did disease severity. However, the pandemic and its effects have continued to persist, especially for a population with high injury prevalence such as warriors.

TIMELINE



COVID-19 SYMPTOMS AND HOSPITALIZATIONS

In the past year, 25.8% of WWP warriors developed COVID-19 symptoms, such as fatigue, headache, sore throat, worsening cough, or shortness of breath.

Of WWP warriors, 3.8% were admitted to the hospital due to COVID-19, compared with 1.2% of the U.S. adult population. The average length of stay among WWP warriors hospitalized for COVID-19-related symptoms was three days, suggesting that most warriors were treated for milder cases, as the recovery rate for milder cases is, on average, three to four days.¹³⁰

3.8% of WWP warriors have been admitted to the hospital for COVID-19-related symptoms compared with 1.2% of the U.S. adult population.*

GAMING

Gaming was identified as a topic of special interest due to the emerging research that suggests gaming can help veterans cope with mental health challenges and find connection with peers.¹³¹ A section on gaming was included in the survey to better understand this trend among the WWP warrior population.

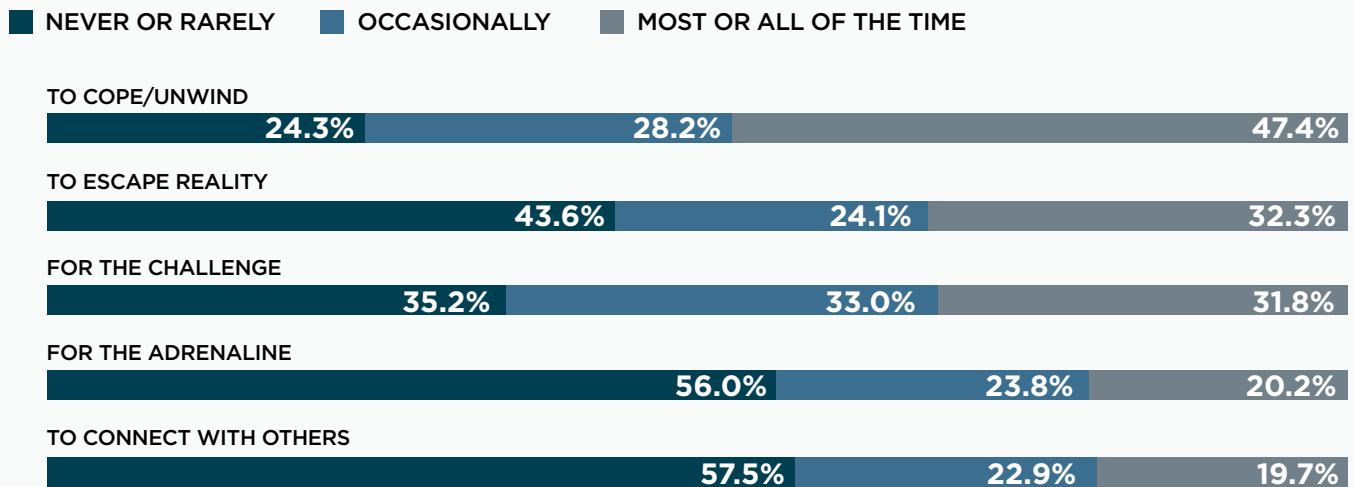
In the most recent 2021 report on video gaming, 67% of U.S. adults reported playing video games.¹³² Video gaming has been shown to have more purpose and utility than simply playing a game, providing complementary treatment to promote personal recovery and help manage stress, mood, coping, confidence, and socialization.^{131, 133, 134} While video games can have a positive impact on well-being, addictive or avoidant use of video gaming for escapism can have negative mental and physical health impacts.^{131, 134, 135}

A better understanding of the positive and negative aspects of video gaming among WWP warriors can provide a comprehensive picture and guide efforts to provide supportive forms of gaming that strengthen connection and support. Overall, 46.8% of WWP warriors indicated some level of video gaming and average 16.6 hours per week of play time. Of WWP warriors who reported playing video games, the most frequently (rated as most or all of time) cited reasons for playing video games were as a way to cope or unwind (47.4%), as a way to escape reality (32.3%), or for the challenge (31.8%).

*Calculated as total of 2,988,684 hospitalizations due to COVID-19 as of the end of September²⁴ divided by the U.S. adult population of 258.3 million.¹²⁸

FIGURE 45. REASONS FOR AND FREQUENCY OF VIDEO GAMING: WWP WARRIORS

Of those indicating video gaming, frequency of video gaming for the following reasons.





CONCLUSION

WOUNDED WARRIOR
BETH KING

CONCLUSION

WWP Annual Warrior Survey data provides a glimpse into the experiences and challenges a warrior may encounter during their journey through selfless service in the military, their transition to civilian life, and beyond.

Warriors' experiences during service can provide a strong sense of camaraderie, purpose, and pride. Service, however, doesn't come without sacrifice. This survey captures some of those sacrifices and the challenges WWP warriors face, including health-related struggles, staying connected with fellow services members, finding gainful employment, and getting the care they need.

Challenges that come with service-related injuries and trauma can set in immediately, or sometime later down the road. For many warriors, the road to recovery extends well into the transition to and through civilian life. WWP is committed to supporting warriors through every step of that journey.

This report is primarily descriptive in nature to set the stage for future efforts in continuing to understand warrior well-being throughout their journey. Understanding the course and impact of challenges and triumphs, as comprehensively as possible, helps provide insight into WWP warriors and warrior wellness. These insights inform the development of timely, data-driven, warrior-informed strategies that allow WWP to support warriors as they take on their next mission.

“Wounded Warrior Project’s message to us was that it doesn’t matter how far away from the war you are... we will always be there for you.”

.....
Wounded Warrior Caregiver
Pam ESTES

“I enlisted because I wanted to be part of a team, part of something bigger than myself. I wanted to be selfless and serve others.”

.....
Wounded Warrior
Donna Pratt

The use of this baseline data can directly inform how and where WWP warriors, and other veterans alike, need support and aid to live their most empowered lives after service. WWP will monitor trends and changes in needs found in Annual Warrior Survey data year over year to advocate and support veterans while continuing to provide direct programs and resources for WWP warriors.

In-depth analysis of all outcomes is limited within this report. Future and supplemental efforts will provide comprehensive analysis, guided by evidence-based research, to explore the relationships between WWP warrior experiences and health outcomes presented within this report.



APPENDIX

WOUNDED WARRIOR
SERGIO ALFARO

APPENDIX

SURVEY POPULATION

Over the 11 years that it has been conducted, the Annual Warrior Survey has undergone several revisions to ensure it still serves its purpose in accurately conveying the evolving and emerging needs of warriors. In 2020, WWP recognized an opportunity to conduct an in-depth assessment of the survey to set it up to be successful for the coming years as the warrior population continues to grow and change. WWP partnered with NORC at the University of Chicago, a nonprofit, nonpartisan firm that has been performing survey research for more than 75 years, to conduct this assessment, including a review of the survey methodology.

After a thorough review of warrior needs and the ways in which WWP programs, policymakers, and data users rely on informed decision making through survey data, the decision was made to transition the Annual Warrior Survey from a cross-sectional census (in which WWP attempted to collect data from all warriors) to a longitudinal sample survey. In a sample survey, WWP does not attempt to collect data from all warriors, but instead randomly selects a representative subset of WWP's warrior population to complete the survey. This method is intended to provide a group of respondents who accurately reflect the characteristics of the entire WWP warrior population. Those selected will continue to be asked to complete the survey prospectively on an annual basis. The sample survey design will allow WWP to better observe, understand, and act upon changes over warriors' lives and to be more proactive in meeting their needs.

Following the evaluation of the Annual Warrior Survey, WWP contracted NORC to conduct the survey in the new format. In April 2021, NORC selected a random sample from the database of all WWP warriors to be included in the longitudinal survey. The entire WWP member database included a total of 152,499 warriors. Overall, 90,000 warriors were selected for the sample — with 60,000 being included in the first round of invitations, 15,000 invited in the second, and 15,000 invited in the third. All female warriors were selected for inclusion to ensure adequate representation because they are a small proportion of all warriors.

SURVEY ELIGIBILITY: To be eligible to participate in the survey, respondents must be registered warriors with WWP. All warriors registered with WWP served on or after Sept. 11, 2001, and incurred a physical or mental illness, injury, or wound as a result of their service. Additionally, warriors must not have opted out of WWP communications or surveys.

SURVEY DEVELOPMENT

The 2021 Annual Warrior Survey underwent significant revisions from prior years to account for emerging issues among the warrior population. NORC, with guidance from WWP, conducted a series of focus groups and expert panels with warriors, warrior family members and caregivers, and subject matter experts to better understand the emerging needs among the injured post-9/11 veteran population. These qualitative discussions helped identify sources for new questions on topics such as traumatic brain injuries (TBIs), toxic exposures, and women's health care.

QUESTIONNAIRE

THE FINAL 2021 ANNUAL WARRIOR SURVEY QUESTIONNAIRE INCLUDED 17 SECTIONS:

Section A: Health and Daily Activities

Section B: Chronic Pain

Section C: Health-Related Matters

Section D: Access to Health Care

Section E: Reproductive Health (female warriors only)

Section F: Post-Military Experiences

Section G: VA Benefits

Section H: Service-Related Injuries.

Section I: Exposure to Environmental Hazards

Section J: COVID-19

Section K: Mental Wellness

Section L: Experiences With Harassment

Section M: Social Support

Section N: Financial Wellness

Section O: Financial Management

Section P: Employment

Section Q: Demographics

Given the substantial changes to the 2021 survey, NORC performed cognitive interviews with warriors to ensure a positive warrior experience and the quality of responses. These interviews were administered with 10 warriors to assess their understanding of the questionnaire items, including question intent and the meaning of specific words and phrases, examining respondents' ability to remember relevant information, decision processes involved with answering a question, and appropriateness of response categories. This cognitive interview process is consistent with best practices in survey research and gives researchers and WWP confidence that warriors understood the new survey items in the way that the researchers intended.

The survey included 169 questions, with many being formatted as multi-item grids. The web survey was programmed with skip logic so warriors would only receive relevant questions. The paper-and-pencil questionnaire included skip logic instructions formatted in accordance with survey design best practices.

METHOD

SURVEY MODE

The 2021 survey was administered in web and paper-and-pencil modes. By offering a paper-and-pencil questionnaire, warriors without access to a computer or internet were given the opportunity to participate, thereby improving the representativeness of the sample. Warriors who called the help line requesting to complete by phone were also given the opportunity to participate. Very few warriors requested a telephone administration — only one warrior requested to complete the full survey by phone, and another warrior only needed assistance with a few questions. These requests were handled by survey professionals at NORC.

FIELD PERIOD

The 12-week field period began on June 2, 2021, and ended on Aug. 30, 2021.

SURVEY RECRUITMENT

A multimodal survey recruitment approach was used for the 2021 Annual Warrior Survey. Warriors received weekly email and text message reminders in addition to several mailing reminders throughout the field period. WWP sent the email invitation and reminders, while NORC sent the text message reminders and the mailings.

TABLE 1A. LIST OF COMMUNICATIONS SENT TO WARRIORS

The final 2021 Annual Warrior Survey questionnaire included 17 sections:

COMMUNICATION	DATE SENT
EMAIL INVITATION (TO INITIAL SAMPLE)	June 2, 2021
EMAIL REMINDER 1	June 10, 2021
REMINDER LETTER	June 14, 2021
EMAIL REMINDER 2	June 16, 2021
TEXT MESSAGE REMINDER 1	June 21, 2021
EMAIL REMINDER 3	June 24, 2021
REMINDER POSTCARD	June 28, 2021
TEXT MESSAGE REMINDER 2	June 28, 2021
EMAIL REMINDER 4	June 30, 2021
EMAIL REMINDER 5	July 8, 2021
TEXT MESSAGE REMINDER 3	July 12, 2021
EMAIL REMINDER 6	July 14, 2021
EMAIL INVITATION (TO SAMPLE GROUP 2)	July 14, 2021
TEXT MESSAGE REMINDER 4	July 19, 2021
PAPER-AND-PENCIL QUESTIONNAIRE + LETTER	July 21, 2021
EMAIL REMINDER 7	July 22, 2021
TEXT MESSAGE REMINDER 5	July 26, 2021
EMAIL REMINDER 8	July 28, 2021
REMINDER LETTER (ADDITIONAL SAMPLE - GROUPS 1 AND 2)	July 29, 2021
REMINDER LETTER 3	July 29, 2021
EMAIL INVITATION (TO SAMPLE GROUP 3)	July 30, 2021
TEXT MESSAGE REMINDER 6	Aug. 2, 2021
EMAIL REMINDER 9	Aug. 5, 2021
TEXT MESSAGE REMINDER 7	Aug. 9, 2021
EMAIL REMINDER 10	Aug. 11, 2021

The initial email invitation provided warriors with information about participating in the survey, including:

- **A link to the survey and unique PIN for logging in**
- **The purpose of the survey**
- **The estimated time to complete the survey**
- **A statement informing warriors they did not have to complete the survey in one sitting**
- **A statement indicating participation is voluntary**
- **WWP's email address, NORC's help line, and a link to the study website**
- **A picture of the gift to be received upon completing the survey: a tactical survival wristband**

The reminder email content varied slightly for warriors who had started the survey but had not completed it and those who had not yet started the survey. Each email included a link to the web survey along with the warrior's unique PIN to log in. Warriors could use this PIN to reenter the survey at the last question answered.

Each text message reminder included a link to the survey. PINs were auto-filled on the login screen after clicking the link so that warriors could click to enter the survey without having to copy and paste or enter the PIN themselves. Warriors could reply "STOP" to opt out of receiving text message reminders.

The reminder mailings provided similar information to the email invitation as well as a list of FAQs that was printed on the back of each letter. The FAQs addressed common concerns, such as the confidentiality of the information provided, contact information to verify the legitimacy of the study, what types of questions would be asked in the survey, and why they were being asked to participate. A link to the FAQs was also displayed on the web survey login screen.

SURVEY HELP CENTER

Emails requesting information about lost PINs or trouble accessing or completing the survey were directed to NORC to respond. NORC managed the phone help line to respond to incoming calls from warriors (e.g., requests to confirm survey validity, seeking assistance with trouble completing the survey, or additional assistance to complete the survey). The WWP Resource Center directed any calls of this nature to the NORC help line. The help line was managed during regular business hours (9 am to 5 pm EDT). Warriors could leave a voicemail when calling after business hours or on weekends, and messages were answered within one business day.

DISTRESSED PROTOCOL

NORC and WWP implemented a protocol for responding to warriors who indicated they were in distress or in need of services in a timely manner. NORC identified warriors each morning who provided survey responses that indicated they might be in distress or in need of WWP services. These cases were shared daily with WWP through a secure file transfer protocol. WWP staff then reached out to warriors to offer support and connect them with any programs or services needed. NORC and WWP also reviewed responses to the weekly text message reminder to identify warriors who may need support and services.

FINAL CASE DISPOSITION

A final cumulative SAS dataset and a dataset for completed cases were created. The cumulative dataset includes all sampled warriors regardless of their final dispositions. The final disposition variable was created to provide additional descriptive information for each case. The final dispositions are listed below, along with a brief description of each. Given the length of the survey and the number of partially completed surveys, surveys completed through Section M were considered a completed questionnaire.

TABLE 2A. FINAL DISPOSITIONS

DISPOSITION	FREQUENCY	DESCRIPTION
COMPLETE	17,693	Completed survey through Section M
PARTIAL COMPLETE	4,436	Started survey but did not complete through Section M
SURVEY NOT STARTED	67,085	Did not start survey
SURVEY OPT-OUT	685	Asked WWP to be removed from the survey
REFUSAL	16	Contacted
INELIGIBLE	22	Survey responses from individuals who were not warriors
INVALID	63	Duplicate surveys or surveys with excessive skipped or refused questions or excessive “don’t know” responses

RESPONSE RATE

The 2021 response rate was calculated using the standard calculation for Response Rate 1 that is developed by the American Association for Public Opinion Research, who is the governing body for scientific survey research organizations:

$$RPI = \frac{\text{Completed Interviews}}{(\text{Number of Interviews}) + (\text{Number of Non-Interviews}) + (\text{Number of Unknown Eligibility})}$$

The number of interviews includes both completed and partial questionnaires; the number of non-interviews includes refusal and break-off, non-contacts, and other; and the number of unknown eligibility includes emails or mailings that were undelivered or other unknown reasons that resulted in unknown reasons for not completing the survey.

The 2021 rate was calculated as follows:

$$RPI = \frac{17,693}{89,915} = 0.1968, \text{ or } 19.68\%$$

INCENTIVE

Warriors were offered the incentive of a tactical bracelet for participating in the 2021 Annual Warrior Survey. This incentive was chosen by WWP to be appealing and useful to warriors and a way for WWP to show appreciation to warriors for participating in the survey.



WEIGHTING

Transitioning to a longitudinal design required the survey to move from a census to a sample design, in which only a portion of all WWP warriors will be asked to complete the survey. In a sample design, the overall sample size must be large enough to allow for detailed analyses within groups and comparisons between groups.

Within the sampling frame, females made up just under 17% of the population. To increase representation, the sample of females was increased — targeting 7,000 completed survey responses from female warriors (35% of the sample), with the remaining 65% completed by males.

To make sure the responses from the selected sample accurately reflected the warrior population, statistical weights were required. To calculate the weights, we used information about how warriors who responded and warriors who did not respond to the survey differed from each other. To determine those factors, several stepwise logistic regressions were run using the survey completion status and three additional survey questions that functioned as key indicator variables:

1. In general, [how good] would you say your health is?
2. Have you had any suicidal thoughts in the past 12 months?
3. Did you ever get tested for COVID-19?

This information was then used to divide the sample into nonresponse adjustment cells, and the nonresponse adjustment was calculated by dividing the sum of the base weights (or the inverse of the sampling probabilities) by the sum of the cells for each combination of variables. Using the nonresponse adjustment, nonresponse weights could be calculated by multiplying the adjustment by the base weights. The nonresponse weights were then used as the initial weights for the iterative proportional fitting or raking algorithm to create final weights. Due to the sample being created for males and females separately, weights were similarly created for males and females separately.

For the 2021 survey, three variables were determined to be associated with the outcomes from the logistic regressions: race/ethnicity (seven levels), age group (seven levels), and injury status (four levels). This initially created 196 adjustment cells; however, cells containing fewer than 20 respondents were collapsed with cells of similar completion status. The final number of nonresponse adjustment cells was 41.

Raking is a statistical weighting technique that is used to improve the accuracy of survey estimates by both reducing bias and increasing precision, which accurately matches sample distributions to known demographic characteristics of the population.* The use of raking reduces nonresponse bias and has been shown to reduce error within estimates. Implementing raking procedures requires the specification of appropriate weighting classes. Data used to form classes for adjustments must be available for both the sample and the population. Raking variables for these data included age group, race/ethnicity, injury status, region, and rurality.

Raking was completed by adjusting for one dimension individually. For example, the weights were first adjusted for age groups, and then those estimates were adjusted by race/ethnicity and so on. This procedure was repeated iteratively until all group proportions in the sample differed from the population by less than a specified threshold. Once raked, weight trimming was used to reduce errors in the outcome estimates caused by unusually high or low weights in some categories, and then raking was performed again on the trimmed weights.

Table 3A shows a summary of the base weights, nonresponse weights, and raked weights for the respondents and nonrespondents for males, and Table 4A shows a similar summary for females.

* Little, R. (1993). Post-stratification: A modeler's perspective. *Journal of the American Statistical Association*, 88(423), 1001-1012. doi:10.2307/2290792.

TABLE 3A. SUMMARY CHARACTERISTICS OF 2021 BASE WEIGHTS, ADJUSTED WEIGHTS, AND FINAL WEIGHTS FOR MALES

CHARACTERISTIC	2021 BASE WEIGHTS		2021 NONRESPONSE ADJUSTED WEIGHTS		2021 FINAL ADJUSTED WEIGHTS	
	RESPONDENTS	NON-RESPONDENTS	RESPONDENTS	NON-RESPONDENTS	RESPONDENTS	NON-RESPONDENTS
MINIMUM	1.00	1.00	2.07	0.00	2.28	0.00
MAXIMUM	5.50	5.50	74.46	0.00	39.85	0.00
MEAN	2.61	2.50	13.22	0.00	9.86	0.00
MEDIAN	2.39	2.39	8.23	0.00	5.41	0.00

TABLE 4A. SUMMARY CHARACTERISTICS OF 2021 BASE WEIGHTS, ADJUSTED WEIGHTS, AND FINAL WEIGHTS FOR FEMALES

CHARACTERISTIC	2021 BASE WEIGHTS		2021 NONRESPONSE ADJUSTED WEIGHTS		2021 FINAL ADJUSTED WEIGHTS	
	RESPONDENTS	NON-RESPONDENTS	RESPONDENTS	NON-RESPONDENTS	RESPONDENTS	NON-RESPONDENTS
MINIMUM	1.00	1.00	1.57	0.00	0.99	0.00
MAXIMUM	1.50	1.50	15.21	0.00	23.32	0.00
MEAN	1.39	1.32	6.22	0.00	5.31	0.00
MEDIAN	1.50	1.50	4.16	0.00	3.61	0.00

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