

2015 Health Related Behaviors Survey

Mental and Emotional Health Among U.S. Active-Duty Service Members

The Health Related Behaviors Survey (HRBS) is the U.S. Department of Defense (DoD)'s flagship survey for understanding the health, health-related behaviors, and well-being of service members. Fielded periodically for more than 30 years, the HRBS includes content areas—such as substance use, mental and physical health, sexual behavior, and postdeployment problems—that may affect force readiness or the ability to meet the demands of military life. The Defense Health Agency asked the RAND Corporation to revise and field the 2015 HRBS.

In this brief, we review results for mental and emotional health. We summarize conclusions, implications, and data limitations. We make several comparisons to the overall U.S. population, including the Healthy People 2020 (HP2020) objectives established by the U.S. Department of Health and Human Services. Because the military differs notably from the general population (e.g., service members are more likely to be young and male than the general population), these comparisons are offered only as a benchmark of interest.

Mental Health Indicators

The 2015 HRBS included questions screening for three mental health conditions: depression, generalized anxiety disorder (GAD), and posttraumatic stress disorder (PTSD). Overall, the HRBS indicates that 17.9 percent (CI: 16.5–19.2) of service members screened positive for at least one of these disorders, and 9.7 percent (CI: 8.6–10.8) screened positive for at least two.

Depression is one of the most common mental health disorders, affecting approximately one in six U.S. adults during their lifetime. Left untreated, depression can lead to diminished work productivity, absenteeism, lost wages, use of social security insurance at younger ages, and other physical and mental ailments.

The 2015 HRBS measured depression using the Patient Health Questionnaire-9 (PHQ-9). It found that 9.4 percent (CI: 8.4–10.5) of service members reported probable depression (i.e., had PHQ-9 scores of 15 or above) in the past

Methods:

RAND fielded the 2015 HRBS among active-duty U.S. military service members in the Air Force, Army, Marine Corps, Navy, and Coast Guard between November 2015 and April 2016. The survey used a random sampling strategy, stratified by service branch, pay grade, and gender (as obtained from Defense Manpower Data Center records). Respondents completed the anonymous survey online, with a response rate of 8.6 percent. This resulted in 16,699 usable surveys (of 201,990 invited to participate).¹ For some analyses, the number of usable surveys may differ because of differences in nonresponse for individual items. To represent the active-duty population, we weighted responses to account for the oversampling of service members in certain strata. In this research brief, we report point estimates and 95-percent confidence intervals (CIs).²

We tested differences in each outcome across levels of key factors or by subgroups—service branch, pay grade, gender, age group, race/ethnicity, and education level—using a two-stage procedure based on (1) a Rao-Scott chi-square test for overall differences across levels within a single factor and, if the overall test was statistically significant, (2) two-sample *t*-tests that explore all possible pairwise comparisons between levels of the factors (e.g., junior officers compared with noncommissioned senior officers). Readers interested in these differences should consult the full 2015 HRBS final report at www.rand.org/t/RR1695.

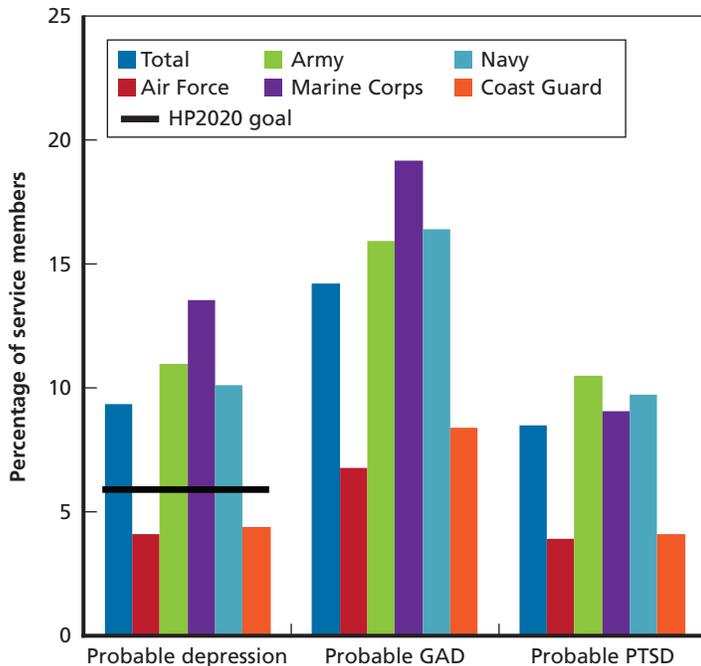
This brief is one of seven, each corresponding to a different chapter in the full report. An eighth brief summarizes the entire report.

¹ When calculating response rates, we excluded service members whom we were unable to contact because of incorrect email or mailing addresses. The number we were unable to contact was 6,770, or 3.4 percent of the sample.

² CIs provide a range in which we expect the true population value to fall. They account for sampling variability when calculating point estimates but do not account for problems with question wording, response bias, or other methodological issues that, if present in the HRBS, might bias point estimates.

year—significantly higher than the HP2020 target of no more than 5.8 percent and higher than the currently estimated 6 percent of U.S. adults. Depression was more prevalent among those in the Marine Corps, Army, and Navy than in the Air Force and Coast Guard (Figure 1); among enlisted personnel (relative to officers); and among women (relative to men).

Figure 1
Probable Depression, GAD, and PTSD, by Service Branch



GAD, one of the most common anxiety disorders, is characterized by frequent and excessive worry. Similar to depression, anxiety disorders have important associated social and economic costs, including loss of productivity and wages, increased absenteeism, and comorbid mental and physical health issues. All of these can negatively affect readiness for military duty, particularly when left untreated.

The 2015 HRBS measured GAD symptoms using the GAD-7 scale. It found that 14.2 percent (CI: 13.0–15.5) of HRBS respondents indicated probable GAD in the past two weeks, a higher prevalence than what the GAD-7 scale has found in the general population. However, the 2015 HRBS prevalence rate is roughly comparable to that of the 2011 HRBS, which used a previously unvalidated screener.

The prevalence of probable GAD in the 2015 HRBS was higher in the Marine Corps, Navy, and Army than in the Air Force and Coast Guard (Figure 1). Prevalence was also higher for enlisted service members and warrant officers than for junior, mid-grade, and senior officers, as well as for women than for men.

Most Americans experience one or more psychological traumas sufficiently severe to trigger PTSD in their lifetime, although most experiencing such trauma do not develop PTSD. According to a 2005 study, 6.8 percent (CI: 6.2–7.8) of the general U.S. population met criteria for PTSD at some point in their lives, and 3.5 percent (CI: 2.9–4.1) met criteria in the past year.

Psychological trauma is a well-known hazard of military service. PTSD may cause suffering and impairment and contribute to attrition, absenteeism, misconduct, and sick call visits. It may also lead to increased health care use, medical morbidity, and health-compromising behaviors, such as tobacco and alcohol abuse. The high prevalence and negative health effects of PTSD have led to increased screening for it at clinics for service members and veterans.

The 2015 HRBS measured probable PTSD using the PTSD Checklist (PCL)–Civilian version. The PCL is widely used in military studies. The HRBS used the civilian version because it assesses PTSD symptoms related to all psychological traumas, not just those directly related to military service.

Across all services, the 2015 HRBS found that 8.5 percent (CI: 7.4–9.5) of service members indicated probable PTSD. This figure is consistent with PTSD prevalence across published studies of previously deployed service members: 4.9 percent to 16 percent, depending on combat theater and service branch. This proportion is also consistent with or slightly higher than the 5.9 percent (CI: 5.3–6.5) of personnel deployed after the terrorist attacks of September 11, 2001, who had high PTSD symptoms in the 2011 HRBS report, which used only a subset of four items from the 17-item PCL scale.

Rates of PTSD were higher in the Army, Navy, and Marine Corps than in the Coast Guard and Air Force (Figure 1). They were also higher for enlisted service members and warrant officers than for junior, mid-grade, and senior officers, as well as for women than for men.

Social and Emotional Factors Associated with Mental Health

The 2015 HRBS also asked questions about social and emotional factors that are associated with mental health, including anger and impulsivity.

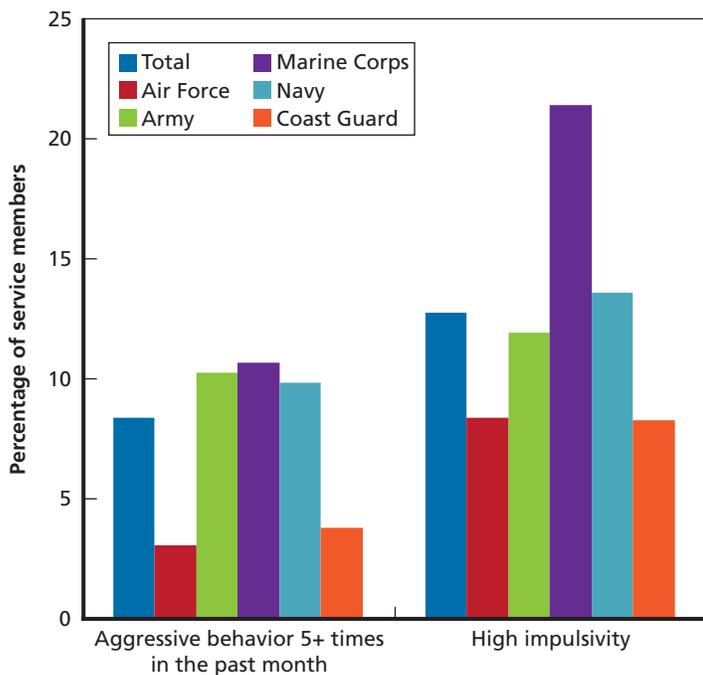
Anger and aggression have been frequently reported among combat veterans. Aggressive behavior may result in military personnel physically harming themselves or others, lead to domestic violence and other illegal acts, and adversely affect military readiness. Identifying baselines of aggressive behavior among the military population may suggest the need for policy or programmatic responses.

To assess levels of aggressive behavior in the military, the HRBS asked respondents how often in the past 30 days they had expressed anger in explosive or aggressive ways. Nearly

half (47.0 percent; CI: 45.3–48.6) of all service members reported at least one of four aggressive behaviors in the past 30 days (getting angry at someone and yelling or shouting; getting angry at someone and kicking or smashing something; making a violent threat; fighting or hitting someone). Although less than 2 percent of service members engaged in physical fighting at least once in the past month, 8.4 percent (CI: 7.4–9.4) reported at least one of the aggressive behaviors five or more times in the past 30 days.

The percentage of service members reporting frequent aggressive behavior was higher in the Army, Marine Corps, and Navy than in the Air Force and Coast Guard (Figure 2). Enlisted members also demonstrated higher rates of frequent aggressive behaviors than officers did.

Figure 2
Frequent Aggressive Behavior and High Impulsivity, by Service Branch



Impulsivity involves the tendency to act on a whim, without considering possible risk or consequences. Impulsivity has been linked to accidental injury, pathological gambling, risky sexual activity, and alcohol use. Among military personnel, impulsivity and sensation-seeking are related to less-frequent seat belt use and increased use of alcohol.

The 2015 HRBS adapted impulsivity questions from the 2011 HRBS. These questions asked respondents to what extent four characteristics—acting impulsively, testing themselves by doing something risky, acting on the spur of the moment, or acting hastily—applied to them. For each statement, respondents could rate their behavior on a scale from 1 (“not at all”) to 5 (“a great deal”); respondents with a mean

score of at least 3 (“somewhat”) across these four items were categorized as having high impulsivity.

The 2015 HRBS found that 12.7 percent (CI: 11.4–14.0) of service members had high impulsivity, slightly higher than the 10.3 percent (CI: 9.7–10.9) with high impulsivity in 2011. Impulsivity was higher among personnel in the Marine Corps than in other services (Figure 2). It was also higher among junior enlisted personnel and among men.

Sexual Assault and Physical Abuse History

The experience of a sexual assault has consequences for the victim, as well as costs for society. Consequences for the victim may include immediate physical harm from the assault and increased risks of sexually transmitted illnesses, pregnancy, and mental and chronic health problems. Overall, health care use has been found to increase in the year after sexual assault and persist for at least three years thereafter. Unwanted sexual contact in the military may also lead to a breakdown of order and discipline, as well as negative effects on retention, recruitment, and readiness.

The 2015 HRBS found that 16.9 percent (CI: 15.8–18.1) of service members reported having any unwanted sexual contact in their lifetime (the question did not define unwanted sexual contact for respondents but did provide examples); 38.2 percent (CI: 34.7–41.8) of respondents who reported unwanted sexual contact indicated that it occurred while on active military duty. Women reported higher levels of unwanted sexual contact in their lifetime (46.1 percent; CI: 44.0–48.1) than men (11.7 percent; CI: 10.3–13.0). There were few noteworthy differences in reports of unwanted sexual contact across service branch or pay grade.

Among all HRBS respondents, 13.0 percent (CI: 11.8–14.1) reported experiencing physical abuse in their lifetime. About one-fourth of respondents who reported physical abuse said they experienced it while on active military duty. More women (18.9 percent; CI: 17.3–20.6) than men (11.9 percent; CI: 10.6–13.2) reported lifetime physical abuse, with nearly one-third of women experiencing it when they were on active duty. There were few statistically significant differences in percentages of service members who reported abuse by service branch or pay grade. Overall, the data indicate that while relatively few military personnel have experienced physical abuse while on active duty, a substantial number have experienced such abuse in their lifetime.

Non-Suicidal Self-Injury

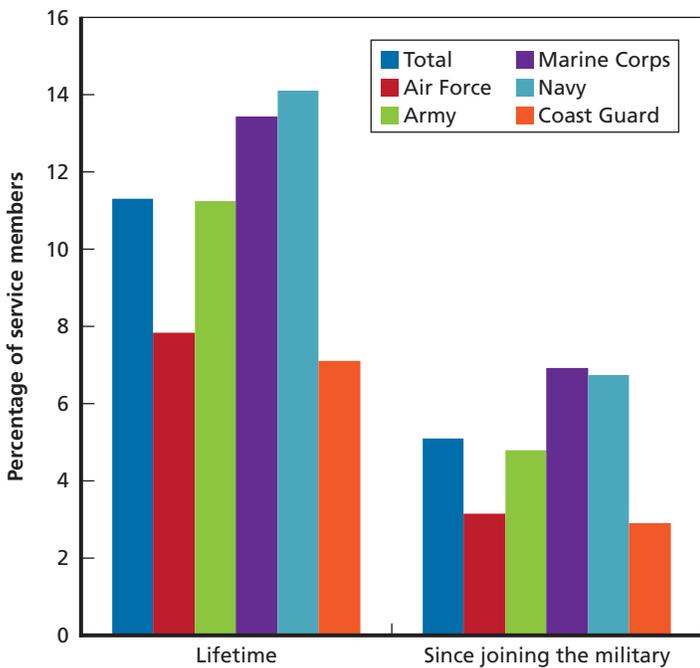
While there is no evidence of suicidal intent with non-suicidal self-injury (NSSI), some studies indicate that NSSI predicts subsequent suicide attempts among both military personnel and veterans. The 2015 HRBS asked how often service members had ever intentionally hurt themselves, “for

example, by scratching, cutting, or burning, even though you were not trying to kill yourself.”

Altogether, 11.3 percent (CI: 10.2–12.4) of service members reported NSSI in their lifetime, which is comparable to the 10.8 percent (CI: 10.2–11.4) reported in the 2011 HRBS. Lifetime prevalence of NSSI was lower in the Air Force and Coast Guard than in the other services (Figure 3). It was also lower among mid-grade and senior officers than among personnel of other pay grades, as well as among men than women.

Overall, 5.1 percent (CI: 4.3–5.9) of service members reported NSSI since joining the military. This, too, is comparable to the 5.2 percent (CI: 4.8–5.6) reporting NSSI in the 2011 HRBS. NSSI since joining the military was also lower in the Air Force and Coast Guard (Figure 3), among mid-grade and senior officers, and among men.

Figure 3
Non-Suicidal Self-Injury, by Service Branch



Suicidality

DoD, the U.S. Department of Veterans Affairs, and other organizations have made significant investments in strategies for preventing and researching suicide, particularly given increasing rates of suicide among active-duty personnel. Surveillance of suicides and suicidal thoughts and behaviors can inform such investments and direct resources to where they are most needed.

The HRBS asked service members if they had ever had thoughts of suicide (suicide ideation) and, if so, when. Over-

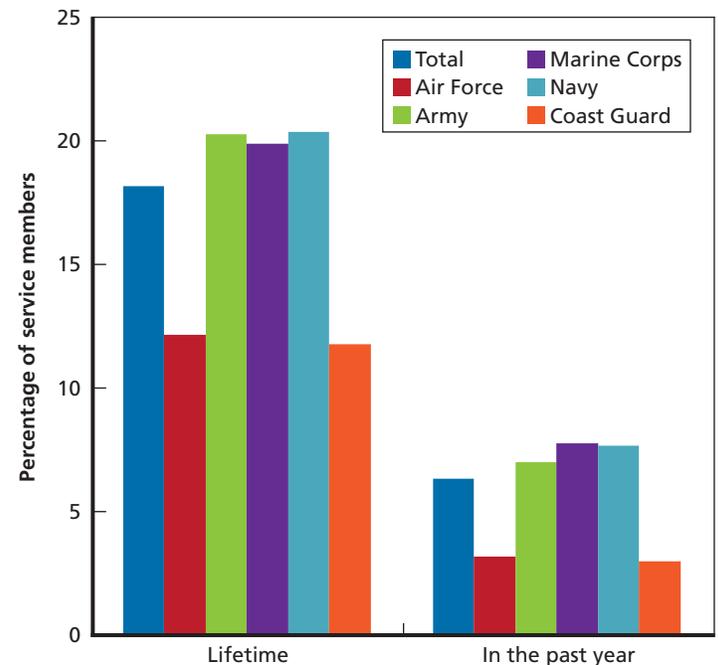
all, 18.1 percent (CI: 16.7–19.4) of service members reported thinking about attempting suicide at some point in their lives. Prevalence of such thoughts was lower in the Air Force and Coast Guard than in the other services (Figure 4). It was also lower among mid-grade and senior officers than for other pay grades, as well as among men than women.

Among all service members, 6.3 percent (CI: 5.3–7.2) reported some suicide ideation in the past year. This is higher than the 3.9 percent (CI: 3.5–4.3) of 2011 HRBS respondents who reported suicidal thoughts in the past year. The prevalence of past-year ideation was higher in the Army, Navy, and Marine Corps than in the Air Force or Coast Guard (Figure 4). It was also higher among junior enlisted personnel than among personnel in other pay grades. Differences between men and women were not statistically significant.

The 2015 HRBS also asked all service members, regardless of whether they reported having thoughts about suicide, if they had ever attempted to kill themselves. Past attempts are the strongest predictor of suicide death, and self-reports of past suicide attempts may capture more attempts than brought to the attention of medical personnel.

Overall, 5.1 percent (CI: 4.3–5.9) of service members reported attempting to kill themselves at some point in their lives. Reported past suicide attempts were lower for personnel in the Air Force and Coast Guard than for personnel of other services, for mid-grade and senior officers than for personnel in other pay grades, and for men than for women.

Figure 4
Suicide Ideation, by Service Branch



In addition, 1.4 percent (CI: 0.9–1.9) of all service members reported attempting suicide in the past year. This is significantly higher than the 0.5 percent (CI: 0.3–0.7) of 2011 HRBS respondents who reported suicide attempts in the past year and the roughly 0.5 percent of all U.S. adults in recent surveys reporting suicide attempts in the past year. There were no statistically significant differences by service branch or between men and women in reported past-year suicide attempts. Most respondents reporting such attempts in the past year also reported receiving subsequent medical care for such attempts.

Mental Health Services

Use of mental health services is one indicator of a population’s mental health need and is important for estimating clinical staffing and the configuration of health resources. The 2015 HRBS asked respondents whether they needed mental health services, what types of services and providers they used, reasons for not obtaining needed services, and whether they believed obtaining mental health services might damage a person’s military career.

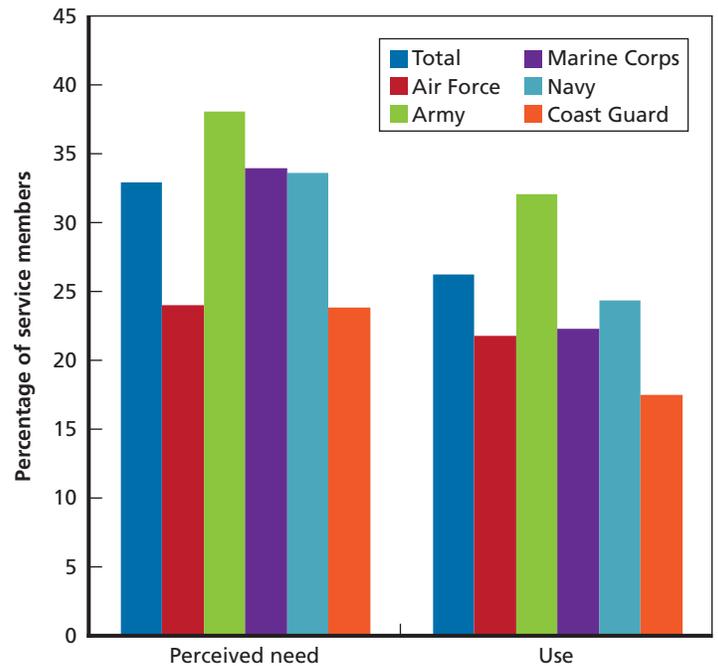
The perceived need for mental health services was relatively widespread: 32.9 percent (CI: 31.3–34.6) reported a need, either self-perceived or perceived by others, in the past 12 months. Self-perceived need for mental health services, at 29.7 percent (CI: 28.1–31.3) in the 2015 HRBS, has risen progressively in the past decade.

Army respondents were most likely to report a perceived need for mental health services, and the Air Force and Coast Guard respondents were least likely (Figure 5). Enlisted and warrant officer service members also reported greater perceived need than officers did, and women were more likely to report a perceived need than men.

Altogether, 26.2 percent (CI: 24.7–27.7) of service members reported using mental health services (all individual or group services aimed at addressing mental health concerns, including seeing a psychologist, seeing a chaplain for counseling, and attending a self-help group) in the past 12 months. The proportion of HRBS respondents who reported using mental health services has climbed in the past decade, due in part to the addition of HRBS items on types of services. Reported use of mental health services was highest in the Army and lowest in the Coast Guard (Figure 5). It was also higher among enlisted personnel than officers and among women than men.

Respondents were about twice as likely to report receiving mental health services from a specialist (18.8 percent; CI: 17.5–20.2), such as a psychiatrist, psychologist, or social worker, than from a general medical doctor (9.9 percent; CI: 8.9–10.9) or from a clergyperson or chaplain (8.0 per-

Figure 5
Perceived Need for and Use of Mental Health Services in the Past 12 Months, by Service Branch



cent; CI: 7.0–8.9). Across the services, the average service member reported 4.5 visits (CI: 3.9–5.0) for mental health services in the past year (this includes all service members, not just those who used services). Of these, 2.5 visits (CI: 2.2–2.9) were to military providers, 0.8 visits (CI: 0.6–1.0) were to civilian providers, and 1.1 visits were to self-help groups or other providers.

More than one in three (36.1 percent; CI: 33.1–39.1) respondents reported needing but not receiving mental health services. The most common reason for not seeking mental health services was that members wanted to handle the problem on their own. Women reported this reason more often than men. Other common reasons included the perception that receiving treatment would harm their career and the fear that supervisors would have a negative opinion of them.

Stigma is a well-known deterrent to seeking mental health treatment. The 2015 HRBS asked respondents to indicate if seeking mental health services would damage a person’s military career. Across all services, 35.0 percent (CI: 33.3–36.7) indicated that mental health treatment would damage a person’s military career. Respondents in the Army were most likely and those in the Air Force least likely to indicate this. Warrant and junior officers were more likely than those of other pay grades to indicate this. There were no statistically significant differences in this attitude between men and women.

Conclusions and Policy Implications

Mental and emotional health problems remain a common issue among service members, with mental disorders and associated social and emotional problems occurring across all service branches and pay grades. Women and service members with lower levels of education are particularly at risk for experiencing these problems. The prevalence of depression, GAD, and PTSD are higher among HRBS respondents than among the general population, although demographic and other differences between these populations make it challenging to interpret these contrasts.

Nevertheless, **the military should seek to characterize the population reach of existing mental health services and to identify when certain types of individuals are not receiving mental health care.** The military should identify programs with the greatest reach and evaluate and monitor their quality and effectiveness. Existing mechanisms, such as the Periodic Health Assessment, may be one way to identify service members in need of treatment. Such efforts must identify service members in a nonstigmatizing, nonthreatening way.

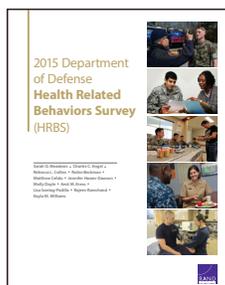
The 2015 HRBS found that roughly half of mental health services are delivered by nonspecialists. **DoD should seek to better identify, improve, and evaluate the sources,**

quality, and outcomes of nonspecialty mental health services delivered to service members. Future research may better determine the reasons that service members seek mental health care services outside the military health system and the impact of these services on the continuity of military mental health care.

The 2015 HRBS findings suggest that suicide ideation and attempts are higher among military members than in the past and compared with civilians. **The military is already devoting significant funding to understanding suicide in the military, but more information is needed on early precursors to suicide and how different strategies may be needed for different populations, depending on their level of risk.** The military also needs to evaluate prevention strategies to better understand their effectiveness, accessibility, and acceptability. The military continues to rely heavily on peer models (e.g., gatekeeper trainings) to prevent suicide, in which peers are instructed on how to intervene with service members in crisis, but little is known on how and whether such interventions work. A clearer understanding of precursors to suicide would allow the military to better tailor prevention efforts and target resources more effectively and efficiently.

Limitations

HRBS response rates were lower in 2015 than in prior iterations of the survey. Low response rates do not automatically mean that the results are biased, but they do increase the likelihood that service members who responded differ qualitatively from those who did not. Those differences, then, could bias our estimates of health and health-related behavior; however, it is impossible to know whether the potential bias would result in better or worse outcomes than those observed in the data. Thus, the results of this survey should be interpreted cautiously and in conjunction with other existing data. In addition, comparing the HRBS with other civilian populations (e.g., all U.S. adults) may be difficult to interpret because of both observed (e.g., demographic) and unobserved differences between the two populations. Finally, because we altered the wording of some questions in the 2015 HRBS, the results presented in this brief may not always be comparable to prior versions of the HRBS.



This brief describes research done in the Forces and Resources Policy Center of the RAND National Defense Research Institute and documented in *2015 Department of Defense Health Related Behaviors Survey (HRBS) of Active-Duty Service Members: Final Report*, by Sarah O. Meadows, Charles C. Engel, Rebecca L. Collins, Robin Beckman, Matthew Cefalu, Jennifer Hawes-Dawson, Molly Doyle, Amii M. Kress, Lisa Sontag-Padilla, Rajeev Ramchand, and Kayla M. Williams, RR-1695-OSD (available at www.rand.org/t/RR1695), 2018. To view this brief online, visit www.rand.org/t/RB9955z3. The RAND Corporation is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. RAND® is a registered trademark. © RAND 2018

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