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 sexual behavior and health. Sexual health is a key aspect of mental and physical well-being and includes behaviors and outcomes related to human immunodeficiency virus (HIV), sexually transmitted infection (STI), healthy pregnancy, and prevention of unintended pregnancy, among others. It can affect the readiness of service members, especially if the behavior or outcome leads to a medical status that prevents a service member from being deployed (e.g., pregnancy), and can affect costs to the services (e.g., for treatment of STIs).

Among specific topics we considered in the HRBS are risky sexual practices, contraceptive use and unintended pregnancy, and HIV testing. We note possible limitations to the data and implications of the findings. Where possible, we compare our findings to previous HRBS findings and U.S. population data, including progress toward 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) and service members must be in good health to join the military, these comparisons are offered only as a benchmark of interest.

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). 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).

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.
Sexual Risk Behaviors

Among all HRBS respondents, 19.4 percent (CI: 18.0–20.8) reported having more than one sex partner in the past year. Respondents in the Marine Corps, Navy, and Air Force were somewhat more likely to report having more than one partner in the past year than those in the Army and Coast Guard. In addition, 36.7 percent (CI: 35.0–38.3) of service personnel reported past-year sex with a new partner without using a condom, nearly double the 20.8 percent who reported this in 2011. Respondents in the Marine Corps, Army, and Navy were more likely to report such behavior in 2015 relative to those in the Air Force and Coast Guard (see the figure at right). Personnel of lower enlisted ranks were more likely to report more than one sex partner and sex with a new partner without using a condom in the past year.

Among married or cohabiting respondents, 6.1 percent (CI: 5.2–7.1) reported multiple sex partners in the past year; among unmarried or noncohabiting respondents, 40.3 percent (CI: 37.4–43.2) did. There was no statistically significant difference between married or cohabiting respondents and those who were not in the proportion who reported past-year sex with a new partner without using a condom. There were no statistically significant differences between men and women for either behavior.

We defined service members at high risk for HIV infection to include men who had sex with one or more men in the past year, service members who had vaginal or anal sex with more than one partner in the past year, and service members who had a past-year STI. Altogether, 20.9 percent (CI: 19.5–22.4) of active-duty service members were at high risk for HIV infection (Figure 1). Respondents in the Marine Corps and Navy were at higher risk than those in other services, as were enlisted personnel of lower ranks. Of married or cohabiting respondents, 7.5 percent (CI: 6.3–8.6) were at high risk for HIV, whereas 42.2 percent (CI: 39.2–45.2) of unmarried or noncohabiting respondents were. There were no statistically significant differences between men and women in the percentage at high risk for HIV infection.

Among all respondents, 22.2 percent (CI: 20.7–23.7) reported condom use during their most-recent vaginal sex. Use was higher among enlisted personnel and junior officers. It was also higher for men (23.0 percent; CI: 21.2–24.7) than for women (17.9 percent; CI: 16.4–19.5) and for persons not married or cohabiting (34.8 percent; CI: 31.9–37.7) than those who were (14.2 percent; CI: 12.7–15.7).

Among all respondents (excluding those who were not expecting a child or trying to conceive one), 19.4 percent (CI: 18.1–20.7) reported not using birth control during the most-recent vaginal sex (in the past year). Air Force respondents were least likely to report this behavior among the services; enlisted personnel of higher ranks and warrant officers were most likely to do so. There were no statistically significant differences between men and women for this behavior. Married or cohabiting respondents (24.0 percent; CI: 22.3–25.7) were twice as likely to report this behavior as those who were not married or cohabiting (12.2 percent; CI: 10.2–14.1).

Contraceptive Use and Unintended Pregnancy

Service members may have difficulties obtaining contraception when they are deployed. They, like civilian populations, may also use short-acting methods of contraception (e.g., condoms, birth control pills) and forget to use them or use them incorrectly, rather than long-acting contraception with lower unintended pregnancy rates.

The table at right shows the percentage of service members using each of a variety of contraceptive methods during the most-recent vaginal sex. Two short-acting methods of contraception—condoms and birth control pills—were, by far, the most commonly used.

Unintended pregnancy was experienced or caused by 2.4 percent (CI: 1.9–2.9) of personnel. Marine Corps personnel were the most likely to report this among the services, as were personnel of lower enlisted ranks. Women (4.8 percent; CI: 3.8–5.8) were also more likely to report it than men. The difference between men and women here is probably a result of men having incomplete information about the occurrence of such events. The percentage of unintended pregnancy reported by military women was about the same as that reported by women of reproductive age in the general population (4.5 percent; CI: 4.1–4.9).
There were no statistically significant differences between married or cohabiting respondents and those who were not for this outcome.

We did not detect an association between unintended pregnancy and contraceptive choice, but this may be due to the difficulty in estimating infrequent events. The pattern was such that unintended pregnancy was least common (1.4 percent; CI: 0.7–2.1) among persons using long-acting contraception, most common (2.9 percent; CI: 1.8–4.1) among those using no contraception, and in between (2.2 percent; CI: 1.3–3.1) for those using short-acting methods.

HP2020 set a goal for increasing use of the “most effective or moderately effective” contraceptive methods among women aged 20–44 who are not already pregnant or trying to become pregnant. The only contraceptive methods in the table that do not fall into this category are condoms and “some other method.” HP2020 reports that from 2011 to 2013, 63.1 percent of such women used a most effective or moderately effective method; HP2020 set a target of 69.3 percent or higher. In the 2015 HRBS, 66.0 percent (CI: 63.7–68.3) of women aged 20–44 who were not already pregnant or trying to become pregnant used such a method.

**HIV Testing**

The Centers for Disease Control and Prevention recommends annual testing for HIV among those at high risk; in addition, DoD Instruction 6485.01 requires screening for all service members at least every two years, and an HIV test result on file within the past 24 months is required to deploy.

Among all service members, 73.5 percent (CI: 72.0–75.0) reported having been tested for HIV in the past year. Although testing rates are slightly higher among service members at high risk for HIV infection, more than one in five high-risk individuals goes untested. Among service members at high risk, 79.4 percent (CI: 76.0–82.7) reported being tested in the past year, leaving 20.6 percent untested. If we multiply this by the percentage of service members at high risk for HIV (20.9), this is equivalent to 4.3 percent (CI: 3.5–5.0) of service members overall who are at high risk for HIV infection and untested in the past year. We found no statistically significant differences among the services in the percentage of members tested for HIV in the past year, rates of past-year testing among those at high risk for HIV infection, or the percentage of personnel at high risk for HIV infection but not tested in the past year.

Although HP2020 does not have a target for HIV testing among high-risk individuals, it seeks to increase such testing among men who had sex with one or more men in the past year from 62.2 percent in 2008 to 68.4 percent by 2020. The 2015 HRBS found that 83.6 percent of men who had sex with one or more men in the past year were also tested for HIV in the past year.

**Conclusions and Policy Implications**

Levels of sexual risk behaviors across the services may be great enough to increase the potential for rapid spread of HIV and other STIs. High risk for HIV infection might be addressed with more-frequent testing. Testing and treatment substantially reduce the risk of further transmission of HIV. While most service members were tested in the past year, about one in five service members at high risk for HIV infection went untested, counter to recommendations from the Centers for Disease Control and Prevention. Efforts to reduce the risk of HIV should focus on unmarried (noncohabiting) service members, more than 40 percent of whom are at high risk for HIV infection.
Unintended pregnancy rates among military women are about the same as among civilian women but are of particular concern given the potential impact of pregnancy on readiness. Furthermore, sex without use of any contraception is not uncommon: Nearly one in four married or cohabiting service members not trying to conceive failed to use contraception the most-recent time they had sex. Rates of unintended pregnancy might be reduced through greater use of contraception, particularly long-acting forms.

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.