



2011

Department of Defense Health Related
Behaviors Survey of Active Duty
Military Personnel



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2011 Health Related Behaviors Survey of Active Duty Military Personnel

Executive Summary

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Executive Summary

At the end of 2011, the United States had faced a decade of war. U.S. Troops had been stationed overseas in Iraq and Afghanistan as part of Operations Enduring Freedom, Iraqi Freedom, and New Dawn. Over that time, the military experienced a sustained period of increased operations tempo, with many service members facing lengthy and multiple deployments and high combat exposure. While fighting a war is what service members are prepared and trained for, it also places heavy burdens on them and their families as they face long separations and put their lives and their health at risk. The 2011 Health Related Behaviors Survey of Active Duty Military Personnel (HRB) report presents findings on the health of the Armed Forces, including Army, Navy, Marine Corps, Air Force, and Coast Guard active duty personnel. The 2011 HRB offers valuable insight into the overall state of behavioral health of active duty personnel and identifies areas of strength and success as well as areas of concern to best inform policies and programs to effectively address the needs of service members and their families.

The 2011 HRB is the largest survey that anonymously gathers data on some of the most important behavioral health issues affecting the well-being of the U.S. military. The anonymous nature of the survey, coupled with the statistically-valid selection of a representative sample of service members, enables the Armed Forces to measure the prevalence rates of health behaviors. While the Department of Defense (DoD), each of the DoD Services, and the United States Coast Guard (USCG) collect administrative data on the outcomes or consequences of maladaptive health behaviors (e.g., number referred to substance abuse treatment), these administrative data often represent a small fraction of the problem, and underscore the need for self-reported measurement of the prevalence rates of these behaviors. The HRB survey ascertains estimates (+/- a small margin of error) of the prevalence of these behaviors, and as a result, provides the Armed Forces a data source that complements administrative records. The data collected over the past 30 years of this survey have been used by military leadership at all levels to make important policy and programmatic changes.

The 2011 HRB was conducted under the advisement of the Office of the Assistant Secretary of Defense for Health Affairs, TRICARE Management Activity (TMA), and the United States Coast Guard (USCG) by ICF International. This was the 11th iteration of the survey; it covers a wide array of health issues, including substance use (i.e., alcohol, tobacco, illicit drug, and prescription drug use and misuse), stress and mental health (e.g., gender-related stress, depressive and posttraumatic stress (PTS) symptoms, suicide, and self-injury), health in the context of deployment and combat exposure, including possible traumatic brain injury (TBI), and overall service commitment to the military.

The methodology has undergone extensive updates since the last iteration of the survey in 2008. The extent of the changes precludes direct comparison to prior iterations of the survey. Some of the major changes include:

- **The mode of administration:** For the first time, the survey was administered through a web-based format (versus a paper-based, group-administered, in-person format), which reduced burden on base-level unit leadership and the survey respondents themselves. The mode change to a web-based survey reduced costs and expanded the geographic reach of the survey, as the sample was not limited to military members confined to a specific set of bases or geographic areas.
- **The sample design:** The sample design of the survey was switched from a clustered sample design to a stratified random sample. The web-based administration eliminated the need to travel to installations; thus, a geographically clustered sample was no longer necessary. Service members were sampled without regard to their current duty location. The DoD sample was stratified by service, gender, and pay grade; the USCG sample was stratified by work setting (ashore, afloat, air), gender, and pay grade.
- **The questionnaire:** Many survey items were revised to improve measurement and item and response option clarity; some substance use measures were better aligned with current national civilian health surveys, such as the National Health Interview Survey (NHIS) conducted by the Centers for Disease Control and Prevention. Overall the questionnaire was shortened, eliminating outdated and unnecessary items, to reduce burden on respondents.
- **The health issues assessed:** The HRB also incorporated and expanded on a number of emerging health issues. These issues include a more refined assessment of prescription drug misuse, new forms of smokeless tobacco (e.g., nicotine dissolvables and electronic cigarettes), the culture of military substance use, personality traits associated with health behaviors (e.g., risk-taking, resilience, anger), self-inflicted injury, pain and pain management, and possible TBI based on standardized measures (Schwab et al., 2006).

The target population for the 2011 HRB included all members of the Army, Navy, Marine Corps, Air Force, and Coast Guard who were non-deployed and on active duty at the time of data collection. The eligible sample size was 154,011 from the DoD services and 14,653 from the USCG. The total number of usable, eligible respondents to the survey was 39,877; 34,416 from the DoD Services and 5,461 from the USCG. The overall DoD response rate was 22% and the overall Coast Guard response rate was 37%.

Invitations and reminders were sent on a staggered start schedule to reduce email and web-based survey server loads and because service branches provided the supporting documentation (e.g., letter

of support from command, whitelisting from each component's IT department) at different times. The initial batch of web-survey invitation emails to the original DoD sample was sent on 19 August, 2011. In addition, invitation and reminder postcards were sent to the physical address of individuals in the four DoD services who had no email address listed in the DMDC database; these individuals were concentrated among junior enlisted personnel. All individuals in the DoD sample missing email addresses were sent one invitation postcard and three reminder postcards. The postcards had the survey URL printed on the card as well as the link to support letters and helpdesk contact information. The initial invitation emails to USCG personnel were sent on 4 October, 2011. The last reminder email was sent on 29 December, 2011. The survey was closed on 11 January, 2012.

The following report is organized into 8 chapters: 1) Introduction, 2) Methodology, 3) Healthy People Objectives, Healthy Lifestyle and Disease Prevention, 4) Substance Use, including Alcohol Use, Illicit and Prescription Drug Use, Tobacco Use, and Culture of Substance Use, 5) Stress and Mental Health, 6) Deployment and Combat Exposure, 7) Service Commitment, and 8) Conclusions and Recommendations. Three appendices are also included that describe the constructs measured in the survey, the privacy and consent statement, and the online survey questionnaire. The following Executive Summary provides an overview of the major findings from the 2011 HRB.

Overview of Healthy People 2020 Objectives, Healthy Lifestyle and Disease Prevention

The findings from the 2011 HRB indicated that service members met 5 out of 8 *Healthy People 2020* objectives captured in the survey, including measures of obesity, healthy weight, exercise, seat belt use, and motorcycle helmet use. However, service members did not meet the *Healthy People* objectives set for cigarette use, smokeless tobacco use, and binge drinking. Other areas of healthy lifestyle and disease prevention covered in the HRB were strength training, nutrition, blood pressure and cholesterol levels, oral hygiene, mouth guard and hearing protection use, sleep, sexual health, gang-related activity, religiosity/spirituality, and health promotion in children living with active duty service members. The major findings for each of these substantive areas are summarized below (see Chapter 3 for details).

Healthy People 2020 Objectives

- **Obesity:** Approximately 13% of active duty personnel age 20 or older were classified as obese according to the Body Mass Index (BMI), which met the *Healthy People* objective of $\leq 30.5\%$ and was lower than the civilian estimate of 33.9%. The Army (16.1%) and Navy (15.0%) reported the highest rates of obesity, and the Marine Corps reported the lowest rate (5.0%).
- **Healthy Weight:** Over one-third (34.7%) of active duty personnel age 20 or older were classified as a healthy weight, exceeding the *Healthy People* objective of $\geq 33.9\%$ and the civilian estimate of

30.8%. The Marine Corps (40.0%) and Air Force (40.2%) reported the highest rates of healthy weight compared to all other services.

- **Physical Activity:** The majority of active duty personnel engaged in physical activity, with 74.9% reporting moderate or vigorous physical activity in the past 30 days, far exceeding the *Healthy People* objective of $\geq 47.9\%$ and the civilian estimate of 43.5%. The Army (79.6%) and Marine Corps (77.8%) reported the highest rates of physical activity compared to all other services.
- **Seat Belt Use:** Active duty personnel engaged in seat belt use at high rates, with 98.5% reporting seat belt use when riding in a car, which exceeded the *Healthy People* objective of $\geq 92.4\%$ and the civilian estimate of 84.0%. The Air Force reported a higher prevalence of seat belt use (99.4%) compared to all other services.
- **Motorcycle Helmet Use:** Most service members (93.8%) reported helmet use when riding on a motorcycle in the past 12 months, far exceeding the *Healthy People* objective of $\geq 73.7\%$ and the civilian estimate of 67.0%.
- **Cigarette Use:** About one-quarter (24.5%) of service members reported cigarette use in the past 30 days, which did not meet the *Healthy People* objective of $\leq 12.0\%$ and was higher than the civilian estimate of 20.6%. The Marine Corps reported the highest rate of cigarette use (31.9%) and the Air Force reported the lowest rate (17.2%).
- **Smokeless Tobacco Use:** The prevalence of smokeless tobacco use among all personnel in the past 30 days was 12.8%, which did not meet the *Healthy People* objective of $\leq 0.3\%$ and was higher than the civilian estimate of 2.3%. Similar to cigarette use, the Marine Corps reported the highest rate of use (21.3%) and the Air Force reported the lowest rate (8.7%).
- **Binge Drinking:** Approximately one-third (33.1%) of active duty service members reported binge drinking in the past 30 days, which did not meet the *Healthy People* objective of $\leq 24.4\%$ and was higher than the civilian estimate of 27.1%. The Marine Corps reported the highest rate of binge drinking (48.6%), and the Air Force reported the lowest rate (22.9%) and was the only service to meet the *Healthy People* objective.

Weight Management, Physical Activity, and Nutrition

- Across all ages, 35.7% of personnel reported a *healthy* weight, with 57.6% of females and 31.8% of males classified in the healthy range. In particular, females in the Marine Corps (82.5%), and males in the Marine Corps (38.6%) and Air Force (36.6%) were more often a healthy weight compared to all other services.
- Across all ages, 51.2% of service members were *overweight*, most often in the Coast Guard (57.2%) than all other services. For males, over half (54.2%) were classified by the BMI as overweight, and

a little over one-third (34.4%) of females were overweight. (Note: BMI does not account for body muscle mass which may contribute to the high rate of overweight service members.)

- For all ages, 12.4% of service members were classified as *obese*, most often in the Army (15.8%) and Navy (14.9%). For females, 6.4% were classified as obese, and for males, 13.5% were considered obese.
- Among all personnel, 10.5% were required to lose weight before joining the military, of which 13.1% were females and 10.0% were males; 3.2% of service members were currently enrolled in a mandatory weight control program, and the majority of personnel (96.0%) passed their most recent physical fitness test.
- Service members were physically active, with 63.1% reporting 150 minutes or more of moderate activity, and 42.6% reporting 150 minutes or more of vigorous physical activity per week. The Army (46.3%) and Marine Corps (46.3%) reported the most vigorous physical activity compared to other services.
- Close to half (45.5%) of service members reported strength training 3 or more days per week in the past 30 days, with the Marine Corps reporting strength training more often than other services (51.0%).
- Active duty personnel reported intake of key healthy foods at lower rates than recommended by nutritional standards of three or more servings per day, including consumption of fruits (11.2%), vegetables (12.9%), and whole grains (12.7%). On the other hand, service members reported consuming unhealthy foods at least two times or more per day, including snack foods (8.5%), sweets (8.7%), and sugary drinks (19.3%). In addition, one-third (33.2%) of active duty personnel reported consuming caffeinated drinks at least two times or more per day
- Just over one-third (37.2%) of personnel reported daily supplement/multivitamin use.

Other Health Behaviors

- **Blood Pressure and Cholesterol Levels:** Approximately 15% of active duty personnel were diagnosed by a doctor with high blood pressure in their lifetime and 13% were diagnosed by a doctor with high cholesterol in their lifetime.
- **Oral Hygiene:** The majority (60.0%) of active duty service members reported brushing their teeth 2 or more times per day, as recommended by the American Dental Association (ADA), whereas 30.6% of service members reported flossing their teeth daily, as recommended by the ADA. The Marine Corps reported the lowest frequency of brushing and flossing.
- **Mouth Guard and Hearing Protection Use:** Over half (51.3%) of active duty personnel reported always or often using a mouth guard in recommended situations, with Marine Corps reporting

the most use (62.3%). In addition, of the 67.4% of personnel exposed to loud noises from weapons firing or explosions, 87.7% reported always or often using hearing protection while exposed to loud noises.

- **Sleep:** Less than half (40.9%) of active duty personnel reported getting the recommended 7 to 8 hours of sleep per night. The Army, Navy, and Marine Corps reported the least amount of sleep.
- **Sexual Health:** Service members in the Marine Corps more often reported new sexual partners in the past 12 months, with 23.9% reporting 2 or more new partners. Across all services, the self-reported prevalence of STIs in the past year was 1.4%, and the lifetime rate was 10.8%.

Gang-Related Activity

- Across all services, 5.5% of active duty personnel noticed gang-related activities among active duty personnel in the past 12 months, most of which was reported by the Army (8.9%) than other services.
- Among all active duty personnel, 1.6% reported being approached to join a gang in the past 12 months or belonging to a gang while in the military.

Religiosity/Spirituality and Health Behaviors

- When examining levels of religiosity/spirituality among active duty personnel, 28.3% were classified as high, 35.3% were medium, 14.0% were low, and 22.4% indicated religiosity/spirituality was “not applicable” to them.
- Those with high religiosity/spirituality reported a lower prevalence of heavy alcohol use (4.8%), current cigarette smoking (15.9%), drinking and driving (4.0%), and low positive affect (6.7%) than personnel who reported lower levels of religiosity/spirituality.

Promoting Healthy Behaviors in Children Living with Military Personnel

- Across all services, 40.7% of active duty personnel reported living with 1 or more children, with 10.6% of Army personnel reporting 3 or more children in the home.
- The majority (94.7%) of active duty service members reported that they always or often promoted healthy food and beverage choices in their children.
- Over half (53.0%) of active duty personnel reported that it was very difficult for their children to access prescription medications in their home, whereas 5.0% reported that it was very easy for children to access prescriptions.

- Among current smokers, 9.1% reported often or sometimes smoking with children present, most often of which was in the Army (12.3%).

Overview of Substance Use

This section presents a summary of findings on alcohol use, illicit and prescription drug use and misuse, tobacco use, which includes smokeless tobacco use, and the culture of substance use in the military. The alcohol and smoking levels presented in the report are based on items from the 2010 National Health Interview Survey (NHIS), sponsored by the Centers for Disease Control and Prevention (CDC). More details on substance use in the military are provided in Chapter 4.

Alcohol Use

- Among current drinkers, 39.6% reported binge drinking in the past month, with the Marine Corps reporting the highest prevalence of binge drinking (56.7%), and the Air Force reporting the lowest prevalence (28.1%).
- When examining levels of drinking across all services, 9.9% were classified as abstainers, 5.7% were former drinkers, and 84.5% were current drinkers; 58.6% of all personnel were classified as infrequent/light drinkers, 17.5% were moderate drinkers, and 8.4% were classified as heavy drinkers.
- Heavy drinkers were more often in the Marine Corps (15.5%), had a high school education or less (12.6%), 21-25 years old (13.2%), unmarried (11.9%), and stationed OCONUS (9.9%).
- In general, active duty personnel who were heavy drinkers, initiated alcohol use at earlier ages, or drank at work more often reported higher work-related productivity loss, serious consequences from drinking, and engagement in risk behaviors than personnel who reported lower levels of drinking, began drinking at older ages, or did not drink at work.
- Across all drinking levels, 11.3% of active duty personnel were classified as problem drinkers (AUDIT \geq 8), with 58.4% of heavy drinkers considered problem drinkers compared to 22.6% of moderate drinkers and 3.8% of infrequent/light drinkers.
- About one-fifth (21.3%) of active duty personnel reported consuming an energy drink combined with alcohol in the past 30 days; this group was more often male (22.4%), had a high school education or less (29.7%), 18-20 years old (37.8%), unmarried (27.5%) or married with a spouse not present (24.8%), junior enlisted E1-E4 (28.0%), and stationed OCONUS (24.2%).
- The most commonly endorsed reasons for drinking among current drinkers were to celebrate (50.2%), enjoyment of drinking (46.2%), and to be sociable (33.4%). The most commonly

reported deterrent to drinking among all personnel was cost (22.6%), with abstainers, former and infrequent/light drinkers endorsing this more often than moderate and heavy drinkers.

- Of all active duty personnel, 1.5% indicated being currently in treatment or likely to seek treatment for alcohol use in the next 6 months. Of possible treatment options, seeking help from church (30.0%) or a military chaplain (29.7%) were most endorsed, and military residential treatment facilities (13.2%) and private residential treatment outside the military (12.7%) were most often cited as unfamiliar resources.

Illicit and Prescription Drug Use and Misuse

- Overall prohibited substance use (excluding prescription drug misuse) in the military was low, with about 1.4% reporting illicit drug, synthetic cannabis, or inhalant use in the past 12 months.¹
- About one-quarter (24.9%) of active duty personnel reported prescription drug use (including proper use and misuse) in the past 12 months, composed of pain reliever (20.0%), sedative (13.4%), stimulant (2.8%), and anabolic steroid (1.4%) use and misuse. Army personnel most often reported prescription drug use (31.4%), and Coast Guard reported the least use (15.3%).
- Across all active duty personnel, 1.3% reported prescription drug misuse in the past 12 months. When examining just those who reported prescription drug use in the past year, 5.7% reported misuse, with steroids (16.6%) and stimulants (11.6%) most commonly misused among prescription drug users.
- The majority (89.8%) of active duty personnel reported receiving drug testing in the past year, with 27.5% tested in the past month, 62.3% tested more than one month ago but in the past year, 8.4% tested more than 1 year ago, and 1.8% reported no history of drug testing. Personnel in the Air Force most often reported never receiving drug testing (2.9%).

Tobacco Use

- When examining levels of cigarette smoking, the majority of active duty personnel were abstainers (58.7%) or former smokers (17.3%). Out of the 24.0% of current smokers, 8.2% were classified as infrequent smokers, 12.6% were light/moderate smokers, and 3.2% were heavy smokers.
- Similar to alcohol, earlier age of initiation for cigarette smoking was associated with being a heavy smoker in adulthood, with those who started smoking at age 14 or younger more likely to be a heavy smoker than those who began smoking at age 21 or older, particularly for males.

¹ The results obtained for illicit and prohibited substance use should be interpreted with caution as some of the data indicated a systematic pattern of response. See Chapter 4.2 for a more detailed explanation of the validity of the illicit drug use results.

- Current cigarette smokers were more often in the Marine Corps (30.8%), male (25.2%), had a high school education or less (37.1%), were junior enlisted E1-E4 (30.3%) or E5-E6 (28.0%), and were stationed OCONUS (25.6%).
- The most commonly cited reasons for cigarette smoking among current heavy smokers were to help relax or calm down (83.6%) and to help relieve stress (81.5%). In addition, over half (52.9%) reported smoking when drinking alcohol.
- Infrequent smokers more often reported that limiting areas where smoking is permitted and increasing prices on military installations would deter smoking compared to light/moderate and heavy smokers.
- Across all services, close to half (49.2%) reported any nicotine use in the past 12 months, with over 60% of Marine Corps reporting nicotine use in the past year. For all personnel, 22.6% reported cigar use, 10.2% reported pipe use, and 19.8% reported smokeless tobacco use in the past 12 months. Marine Corps reported higher cigar (32.5%), pipe (14.2%), and smokeless tobacco (31.9%) use compared to all other services.
- When examining new forms of smokeless tobacco, 4.6% reported using electronic or smoking nicotine delivery products, less than 1% reported using nicotine dissolvables or nicotine gel, and 1.6% reported using caffeinated smokeless tobacco in the past 12 months.
- Among heavy cigarette smokers, 45.2% endorsed prescription medication most often as the preferred form of treatment for nicotine dependence.
- The UCANQUIT2 online quit support was the least recognized of the treatment options, with 19.4% of infrequent smokers, 14.5% of light/moderate smokers, and 10.8% of heavy smokers indicating that they were not familiar with the treatment option.
- Among daily smokeless tobacco users, 44.3% endorsed stopping all at once or “cold turkey” as the preferred method of cessation, and 15.7% were unfamiliar with the UCANQUIT2 online quit support method.

Culture of Substance Use

- When examining social network facilitation of substance use in the military, active duty personnel most often reported that peers engaged in alcohol use (89.0%), cigarette use (73.1%), and smokeless tobacco use (61.2%) in their off-duty hours. Although less often reported, 6.5% reported peer marijuana use, and 4.5% reported peer prescription drug misuse.
- Cigarette (81.9%) and smokeless tobacco (77.7%) use was perceived among peers as highest in the Marine Corps compared to other services. In addition, peer alcohol use was perceived more

often in the Marine Corps (92.3%) and Coast Guard (92.9%), and peer marijuana use was perceived as highest in the Coast Guard (10.6%) than all other services.

- Across all services, active duty personnel reported that leadership most often deterred marijuana (92.8%) and prescription drug misuse (90.6%), and about half reported leadership deterrence of alcohol (51.2%), cigarettes (50.0%), and smokeless tobacco (48.1%). Leadership deterrence of alcohol was more often reported in the Navy (61.2%), and tobacco deterrence was more often reported in the Navy, Air Force, and Coast Guard than in the Army and Marine Corps.
- Heavy drinkers reported higher network facilitation of cigarette use (88.2%), marijuana use (15.2%), and prescription drug misuse (10.4%) compared to other levels of drinking. In addition, heavy and light/moderate smokers perceived higher peer facilitation of cigarette use than other smoking levels.

Overview of Stress and Mental Health

This section presents a summary of stress and mental health in the military, including military-related and personal stressors, gender-related stress, stress coping behaviors, posttraumatic stress (PTS), depression and anxiety symptoms, suicidal ideation and suicide attempts, self-inflicted injury, mental health and substance use, personality traits associated with health behaviors, including high risk taking, high anger propensity, low resilience, and low positive affect, abuse history, mental health treatment and perceived stigma for help-seeking.² Additional information on the results can be found in Chapter 5.

Military and Personal Stressors, Stress Coping Behaviors, and Gender-Related Stress

- The most commonly reported military-related stressors were being away from family and friends (42.3%) and changes in work load (41.5%). In general, women and heavy drinkers more often reported military-related stress than men and lower drinking levels.
- Regarding personal stressors, problems with money (30.2%) and family members' health problems (28.9%) were most frequently endorsed. Females more often reported personal stressors than males, and heavy drinkers more often reported problems with money and relationship problems (i.e., divorce/break-up, infidelity) than personnel with lower drinking levels.
- The most commonly endorsed methods for coping with stress were thinking of a plan to solve the problem (86.2%) and talking to a friend or family member (72.2%), with females more often reporting both of these strategies than males. In addition, males more often reported having a cigarette (21.5% vs. 17.7%) and drinking alcohol (23.8% vs. 21.0%), and females more often

² Mental health measures reflect self-reported symptoms, but do not represent clinical diagnoses of psychological conditions or suggest the need for treatment.

reported getting something to eat (52.8% vs. 42.8%) and sleeping (64.5% vs. 48.6%) as strategies to cope with stress.

- Over half (50.7%) of females reported stress related to their gender, whereas 25.5% of males reported gender-related stress.

Posttraumatic Stress, Depression, Anxiety, and Self-Harm Behaviors

- Overall, 5.0% of personnel reported high posttraumatic stress (PTS) symptoms, with those in the Army (7.2%) and Marine Corps (7.3%) reporting PTS symptoms more often than other services.
- Across all services, 16.7% of personnel reported high anxiety symptoms, with Marine Corps (22.0%) and Army (20.0%) reporting high anxiety symptoms more often than other services.
- For all services, 9.6% of active duty members reported symptoms indicative of high depression, which was more often reported in the Marine Corps (13.0%) and Army (11.8%).
- When examining self-harm behaviors, 7.9% of personnel reported suicidal ideation since joining the military, of which 3.9% reported ideation in the past year. In addition, 1.3% of service members reported attempting suicide since joining the military, with 0.5% reporting an attempt in the past year. In addition, 5.2% of service members reported self-inflicted injury since joining the military, which was reported more often in the Marine Corps (8.1%) than in other services.

Mental Health and Substance Use

- Heavy drinkers more often reported high overall stress (63.4%), high anxiety symptoms (32.9%), high depression symptoms (20.8%), high PTS symptoms (13.2%), suicidal ideation (10.6%), and abuse history (33.2%) compared to lower drinking levels.
- Similar to heavy drinkers, heavy cigarette smokers more often reported high overall stress (61.1%), high anxiety symptoms (35.4%), high depression symptoms (21.2%), and high PTS symptoms (16.2%) compared to lower smoking levels; there were fewer differences across smoking levels for suicidal ideation and history of abuse.

Personality Traits Associated with Mental Health

- Across all services, 10.3% of active duty personnel reported high risk-taking, 7.2% were classified as having high anger propensity, and 9.6% reported low positive affect. In particular, Marine Corps reported the highest levels of risk-taking (15.1%), and Marine Corps (10.4%) and Army (9.4%) personnel reported the highest levels of anger compared to all other services.

- Resilience levels were also examined, with 4.3% classified as low, 61.3% classified as moderate, and 34.4% reporting high resilience; there were few differences in resilience levels across services.
- Heavy drinkers more often reported high risk-taking (23.3%) and high anger (18.0%) than lower drinking levels.

Physical and Sexual Abuse History

- Overall, 24.5% of service members reported any history of physical abuse (17.1%) or unwanted sexual contact (14.3%) in their lifetime. Personnel in the Marine Corps more often reported physical abuse since joining the military by someone in the military (8.1%) compared to other services, and Navy more often reported unwanted sexual contact since joining the military by someone in the military (7.7%).
- When examining abuse history for women, close to half (48.3%) reported a history of lifetime abuse, with Marine Corps (57.7%) and Army (54.1%) reporting the most abuse history. Sexual abuse (42.0%) was more common than physical abuse (24.2%); 21.7% of women reported unwanted sexual contact since joining the military by someone in the military, of which 29.7% was reported in the Marine Corps.
- For men, 20.1% reported any history of lifetime abuse, most often in the Marine Corps (24.9%) and Army (23.0%). Physical abuse (15.8%) was more common than sexual abuse (9.2%), and physical abuse since joining the military by someone in the military was more often reported in the Marine Corps (8.0%) than all other services.

Mental Health Treatment and Perceived Stigma

- Across all services, 24.9% of active duty personnel reported receiving mental health treatment from a counseling professional in the past 12 months, with Army personnel reporting treatment more often (32.1%) than all other services.
- For all services, the most common reasons reported for seeking mental health treatment were depression (11.6%), anxiety (10.4%), stress management (10.3%), and family problems (10.2%). Army personnel most often sought treatment for depression (16.1%), anxiety (14.6%), and stress management (13.6%), whereas Marine Corps most often sought treatment for substance use problems (2.5%) compared to all other services.
- Over one-third (37.7%) of personnel indicated that seeking mental health treatment would damage a person's military career, which was most often endorsed in the Navy (42.1%) compared to all other services. For those who did seek help in the past year, 21.3% reported it had a negative effect on their career, most often in the Marine Corps (26.2%) and Navy (24.3%).

- Active duty personnel who perceived a need for mental health treatment but did not seek it more often reported it would damage a person's career (53.0%) than those who did seek treatment (40.5%).

Overview of Deployment and Combat Exposure

This chapter focuses on characteristics of both non-combat and combat deployments since September 11, 2001, including length and frequency of deployments and theater of operations, levels of combat exposure by stress, mental health, and substance use, characteristics associated with possible traumatic brain injury (TBI), and reasons for non-deployment and returning early from deployment. More details on the results can be found in Chapter 6.

Deployment Characteristics

- Across all services, 20.6% of active duty personnel reported a combat zone deployment in the past 12 months, with Army more often reporting combat deployments in the past year (25.7%) than other services. Army also reported the most combat deployments since September 11, 2001 (19.2% reported 3 or more combat deployments), the longest total time spent deployed (32.1% reported combat deployments since 9/11 totaling more than 18 months), and 40.9% reported the length of longest single combat deployment since 9/11 was 13 to 18 months, which was longer than all other services.
- Across all services, 13.1% reported a non-combat zone deployment in the past 12 months, with Coast Guard reporting the most non-combat deployments (25.4%) in the past year. Coast Guard personnel also reported the highest frequency of non-combat deployments since September 11, 2001 (28.0% reported 3 or more non-combat deployments), and the longest total time spent deployed (11.8% reported non-combat deployments since 9/11 totaling more than 18 months). However, the majority (85.9%) of Coast Guard personnel reported the length of longest single non-combat deployment since 9/11 was less than 6 months.
- Of the 16.6% of active duty personnel who were unable to deploy, the Marine Corps reported the highest frequency (22.5%) of non-deployment compared to all other services. Across all services, the most common reasons cited for non-deployment (other than an unspecified reason) were having an injury (31.5%) and having an illness or medical problem (23.4%). In addition, Coast Guard (39.6%) and Army (39.0%) personnel more often cited having an injury as a reason for non-deployment than other services.
- Of all personnel, 2.2% returned early from a deployment; the most common reasons cited (other than an unspecified reason) were a family situation (22.1%) and having an injury (12.1%).

Levels of Combat Exposure

- Across all services, 56.2% of personnel reported combat exposure, of which 22.5% was classified as high, 21.0% was moderate, and 12.7% was low exposure. Army personnel most often reported high combat exposure (41.9%), whereas just 1.2% of Coast Guard personnel reported high combat exposure. Air Force members most often reported moderate exposure (23.7%), and Navy members most often reported low combat exposure (26.0%) compared to all other services.
- Personnel with high combat exposure were more often male (24.8%), White, non-Hispanic (24.1%), had a college degree or higher (25.2%), were 36-45 years old (32.9%) or 46-65 years old (34.0%), and were married with a spouse not present (25.7%) or married with a spouse present (27.6%).

Combat Exposure, Theater of Operations, and Substance Use

- Personnel who experienced high combat were more likely to be classified as heavy drinkers (10.3%) and use prescription drugs (34.2%) than personnel exposed to lower levels of combat or no combat.
- Personnel combat deployed to a mission other than Operation Iraqi Freedom (OIF), Enduring Freedom (OEF), or New Dawn (OND) more often reported binge drinking in the past 30 days (37.0%). On the other hand, those serving in OIF, OEF, or OND more often reported prescription drug use (including proper use and misuse) in the past 12 months (28.8%).
- In general, those who were combat deployed since September 11, 2001 were more often current and heavy cigarette smokers than personnel who were not combat deployed.
- When examining increases in substance use during most recent deployment, Coast Guard (15.2%) and Navy (12.7%) personnel reported more alcohol use when deployed, Army reported more cigarette (20.7%) and cigar use (12.4%), and Marine Corps reported more cigarette (23.5%), cigar (10.7%), and smokeless tobacco use (15.9%) when deployed.

Combat Exposure, Theater of Operations, Stress and Mental Health

- For all services, 41.7% reported high overall stress; of those who experienced high combat exposure, 51.2% reported high stress levels. Further, 15.1% of personnel experienced high stress upon returning from deployment; of those with high combat exposure, 35.3% reported experiencing high stress after returning from deployment.
- Across all services, active duty personnel deployed for more than 18 months since 9/11 more often reported high PTS symptoms (7.9%) and high anger (10.1%) than personnel deployed for lesser amounts of time.

Possible Traumatic Brain Injury (TBI), Substance Use, Stress and Mental Health

- Across all services, 12.5% of active duty members whose most recent deployment was a combat deployment reported symptoms consistent with possible TBI, most often in the Army (18.0%) and in those with high combat exposure (24.2%).
- Among service members who were deployed (combat and/or non-combat) since 9/11, personnel with possible TBI were more often male (10.5%), had a high school education or less (12.7%) or some college education (11.2%), were married with a spouse not present (12.0%) or married with a spouse present (10.3%), and were junior enlisted E1-E4 (13.9%).
- Among service members who were deployed (combat and/or non-combat) since 9/11, personnel with possible TBI more often reported high overall stress compared to personnel with unlikely TBI (68.3% vs. 41.1%), high depression symptoms (22.5% vs. 8.3%), high anxiety symptoms (43.2% vs. 14.9%), high PTS symptoms (22.3% vs. 3.7%), suicidal ideation (9.9% vs. 3.2%), suicide attempts (2.1% vs. 0.3%), self-inflicted injury (12.9% vs. 4.7%), high risk-taking (18.1% vs. 8.8%), high anger (18.7% vs. 6.6%), and low positive affect (16.6% vs. 9.0%).
- In addition, active duty personnel who were deployed since 9/11 and indicated possible TBI more often reported binge drinking (39.2% vs. 32.7%), possible alcohol dependence (3.0% vs. 1.6%), prescription drug use (44.9% vs. 25.5%) and misuse (3.4% vs. 1.0%), current smoking (36.8% vs. 24.0%) and heavy smoking (6.9% vs. 3.5%), smokeless tobacco use (28.9% vs. 18.8%) and daily smokeless tobacco use (13.9% vs. 7.3%), compared to those with unlikely TBI.

Overview of Service Commitment

This chapter of the HRB report examines levels of service commitment in the military, and associations with substance use and mental health. Additional details on the findings of this section are presented in Chapter 7.

- Across all services, 22.2% of active duty personnel reported high service commitment, 53.7% reported moderate commitment, 17.8% reported low commitment, and 6.3% reported a detached level of commitment from the military.
- Personnel with high service commitment were more often male (22.8%), a college graduate or higher (31.7%), over age 46 (46.6%), married with a spouse present (26.5%), a warrant (47.4%) or senior ranking officer O4-O10 (47.5%), and stationed CONUS (23.3%).
- Personnel who reported detached service commitment more often had a high school education or less (8.4%), were 18-20 years old (8.6%) or 21-25 years old (11.1%), unmarried (8.9%) or married with a spouse not present (7.9%), junior enlisted E1-E4 (10.7%), and stationed OCONUS (8.1%).

- Coast Guard (26.8%) and Navy (26.4%) reported the highest level of service commitment, whereas Marine Corps personnel most often reported low (22.7%) or detached (9.5%) service commitment.
- Personnel with detached service commitment more often reported heavy alcohol use (20.3%), heavy cigarette smoking (6.6%), high depression symptoms (34.5%), high overall stress (77.9%), low resilience (12.0%), and the most work productivity loss (4.7 days) than those with higher levels of service commitment.

Overview of Conclusions and Recommendations

The last chapter of the 2011 HRB report provides general conclusions concerning the state of behavioral health of the U.S. military after a decade of war and increased operations tempo. The findings demonstrated that service members were generally resilient, and the state of behavioral health among active duty personnel was robust. Overall, the force was doing well in areas of fitness, exercise, and safety behaviors and had a high level of service commitment. In regards to areas in need of improvement, rates of alcohol and tobacco use, particularly smokeless tobacco use, were high. In addition, although prescription drug misuse was not as widespread as previous estimates have indicated, a sizable proportion of service members reported using prescription drugs, specifically pain relievers and sedatives. With regard to mental health, the HRB results, though not clinical diagnoses, showed that service members who experienced more deployments and combat exposure also reported a higher prevalence of PTS, depressive and anxiety symptoms, and suicidal ideation. Mental health conditions often co-occur with substance abuse and other health problems such as high stress. Reported rates of unwanted sexual contact, particularly among female service members, warrant attention and action.

Recommendations are provided to highlight ways the HRB survey can be effectively used by Armed Forces leadership, behavioral health service providers, researchers, and the public to inform the investment in and improvement of policies, services and prevention and treatment programs, and to support research to further examine the current and future needs of active duty service members and their families. Three overall recommendations were proposed:

- Guide military programs and policies
- Evaluate the effectiveness of interventions for service members and their families
- Provide researchers with a rich and comprehensive data set on the current state of behavioral health of service members

Enacting these recommendations would make the best use of the data gathered in this study and ultimately help to improve the behavioral health of the U.S. military. Improvements in the behavioral health of military personnel would directly impact their productivity and their commitment to the Armed Forces. Investing in behavioral health leads to a stronger force, enhanced readiness, and increased retention of service members.

