2014 Health Related Behaviors Survey of Reserve Component Personnel



Total Reserve Component Executive Summary Report

Fall 2015 Defense Health Agency

Analysis of Health Behaviors among the Total Reserve Component

INTRODUCTION

The 2014 Department of Defense (DoD) Health Related Behaviors (HRB) Reserve Component Survey is the third population-based survey about substance use, stress and mental health, and health behaviors related to select Healthy People 2020 (HP2020) objectives among the Reserve Components. The online survey was fielded from September 2014 to January 2015 using a disproportionate stratified sample of non-activated Reserve and Guard personnel from six Components (Army National Guard, Army Reserve, Navy Reserve, Air National Guard, Air Force Reserve, and the Marine Corps Reserve). The estimates in this report are based on 18,359 responses from Reserve and Guard personnel. The study population does not include Reservists deployed at the time of data collection, full-time Reserve Unit Support, Individual Ready Reserve, or retired Reserve Component personnel. The study population does include personnel in the Active Guard/Reserve Program.

This report presents prevalence estimates of health behaviors among the Total Reserve Component, presenting findings on substance use, physical health, stress and mental health, and deployment. The report also compares estimates of the health behaviors of the Total Reserve Component to key Healthy People 2020 objective targets. More detailed analyses on these health topics can be found in topical reports. Appendix I provides more information on the methodology of this survey and analysis.

SUBSTANCE USE

Prevalence Overview

Table 1 presents prevalence of substance use among different sociodemographic categories of the Total Reserve Component. Nearly nine percent of Reserve and Guard personnel are classified as unhealthy drinkers, 11.2% are current cigarette smokers and 12.1% are current smokeless tobacco users. Differences in substance use are observed by race, with a higher percentage of Whites being unhealthy drinkers, current cigarette smokers, and current smokeless tobacco users than personnel in certain other races. Tobacco use is more frequent among those with some college as compared with college graduates. Differences by paygrade are detected in cigarette smoking, with those in the E4 – E6 and E7 – E9 paygrades being more likely to smoke than are officers. Gender differences are detected among smokeless tobacco users; men are twelve times more likely than women to use smokeless tobacco (14.8% vs. 1.2%).

More detail about substance use can be found in the sections that follow. Note: estimates of illicit drugs and prescription misuse are not included in this report because of their very low prevalence. For information on prevalence of those substances, please see the Substance Use Topical Report.

Sociodemographic Characteristics	Unhealthy Drinking	Current Cigarette Smoking	Current Smokeless Tobacco Use
Component		SHIOKINg	
Total Reserve Component	8.6% (1.0)	11.2% (1.2)	12.1% (1.2)
Gender	0.070 (2.0)		
Male	9.1% (1.2)	11.6% (1.4)	14.8% (1.5) ²
Female	6.7% (0.8)	9.5% (0.7)	$1.2\% (0.3)^1$
Race/Ethnicity	, , ,		, , ,
Hispanic	4.2% (1.2)	12.9% (5.1)	5.9% (2.0) ^{2,}
White, non-Hispanic	10.9% (1.5) ⁴	$12.5\% (1.2)^3$	15.7% (1.7) ^{1,4}
Black, non-Hispanic	4.6% (1.5)	$4.3\% (1.2)^2$	5.9% (2.4)
Asian, non-Hispanic	$1.7\% (0.7)^2$	5.9% (2.7)	$2.8\% (1.0)^2$
Two+ races, non-Hispanic	12.0% (4.4)	11.8% (3.4)	9.8% (3.3)
Other, non-Hispanic	4.1% (2.0)	7.1% (2.5)	9.1% (5.5)
Education			
High school or less	7.7% (2.6)	18.8% (6.9)	9.9% (2.8)
Some college	10.8% (1.8)	13.5% (1.5) ³	16.1% (2.2) ³
College graduate or higher	6.0% (0.7)	5.9% (0.7) ²	7.8% (0.9) ²
Age			
24 or younger	10.9% (4.1)	6.2% (1.6)	16.0% (5.2)
25 – 34	9.3% (1.5)	14.6% (3.0)	14.7% (2.1) ⁴
35 – 44	8.3% (1.3)	12.4% (1.7)	12.0% (1.8)
45 or older	6.2% (1.2)	9.0% (1.5)	6.3% (0.9) ²
Family Status			
Not married	9.2% (1.4)	11.7% (2.4)	9.9% (1.5)
Married	8.2% (1.4)	10.8% (1.1)	13.5% (1.7)
Pay Grade			
E1 – E3	9.3% (3.8)	9.3% (4.7)	12.3% (4.8)
E4 – E6	8.9% (1.2)	14.1% (1.5) ^{4,5,6}	13.4% (1.6) ⁶
E7 – E9	8.3% (0.5)	11.3% (0.6) ^{4,5,6}	11.5% (0.6) ⁶
W1-W5	6.7% (0.9)	6.8% (0.9) ^{2,3,6}	7.8% (1.0)
01-03	7.6% (0.8)	4.8% (0.6) ^{2,3,6}	9.8% (0.9) ⁶
04-010	6.3% (0.4)	2.4% (0.2) ^{2,3,4,5}	6.2% (0.4) ^{2,3,5}

Table 1 displays the percentage of Total Reserve Component personnel, by sociodemographic characteristic, classified by select substance use types, as indicated in the columns. The standard error is presented in parentheses.

Statistical significance tests were conducted between all rows within the same sociodemographic group for each substance use type. A superscripted number beside an estimate indicates that the estimate is statistically significantly different than the estimate that appears in the row number within the same sociodemographic group. For example:

¹Indicates the estimate for the current smokeless tobacco is statistically significantly different than the estimate in row #1 (Male) at the 95% confidence level after Bonferroni adjustment.

²Indicates the estimate for the current smokeless tobacco is statistically significantly different than the estimate in row #2 (Female) at the 95% confidence level ater Bonferroni adjustment.

Unhealthy drinking is defined as heavy drinking, frequent binge drinking, or having an AUDIT score ≥ 8 . Current cigarette smoking is defined as having smoked at least 100 cigarettes in one's lifetime, currently smoking, and having smoked in the past 30 days. Current smokeless tobacco use is defined as using smokeless tobacco about once a month or more within the past year.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Demographics: Q1, Q3, Q4, Q12, Q13, Q14, Q15, and Q18; Unhealthy drinking level: Q4, Q45, Q47, Q48, Q55, Q56, Q57, Q58, and Q59; Current cigarette smoker: Q70, Q73, and Q75; Current smokeless tobacco user: Q81 and Q82.

HEALTHY PEOPLE 2020 COMPARISON OVERVIEW

Figure 1 presents the prevalence of substance use among the Total Reserve Component, as well as the related HP2020 targets identified by the Department of Health and Human Services as health promotion and disease prevention goals for the U.S. population. Prevalence of binge drinking and past 30 day smokeless tobacco use among Reserve and Guard personnel exceed the HP2020 targets of 24.4% and 0.3%, respectively. However, prevalence of cigarette smoking is below the HP2020 target of 12.0%.

ALCOHOL CONSUMPTION

Prevalence of Alcohol Consumption

Excessive alcohol consumption is a well-known public health concern. The *Dietary Guidelines for Americans* recommends that adults who choose to consume alcohol do so in moderation. Excessive alcohol consumption is associated with negative health and social consequences.

Health researchers focus on two types of excessive drinking: heavy drinking and binge drinking. Four percent of Total Reserve Component personnel are classified as heavy drinkers (defined as having more than seven drinks per week on average for women and more than 14 drinks on average for men). Fifty-eight percent of Total Reserve personnel are classified as infrequent or light drinkers (drinking on average fewer than four drinks per week).

Binge drinking refers to the intensity of alcohol consumption, specifically the amount of alcohol consumed on one occasion or sitting. Thirty-one percent of Total Reserve personnel report binge drinking in the past 30 days.

The Alcohol Use Disorders Identification Test (AUDIT) is a 10-item questionnaire designed by the World Health Organization to identify hazardous and harmful alcohol use by asking about drinking habits, dependence symptoms and harmful drinking use. Of Total Reserve personnel, 92.4% have AUDIT scores classified as low risk. Approximately 5.9% are classified as hazardous or harmful drinkers (defined as an AUDIT score between 9 and 19), and 1.6% are classified as possibly dependent drinkers (defined as an AUDIT score of 20 or greater).

To summarize Reserve and Guard personnel with the highest risk of unhealthy drinking using the classification systems in the HRB survey, we created a measure to identify individuals who were classified in at least one of the following excessive alcohol consumption categories: 1) being classified as a heavy drinker, 2) being classified as a high-frequency binge drinker (defined as someone who engages in binge drinking at least once per week, on average), or 3) being classified as a higher risk drinker according to AUDIT score (defined as an AUDIT score ≥ 8). We have classified these individuals as unhealthy drinkers to represent their increased risk for negative health and social consequences.



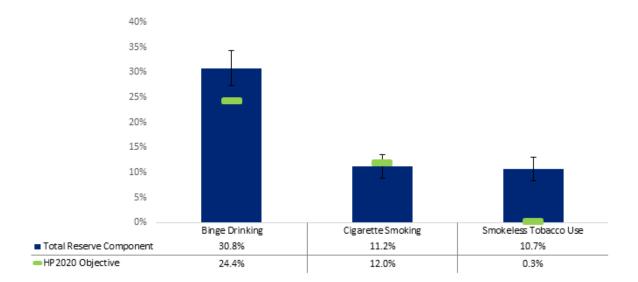


Figure 1 displays the percentage of Total Reserve Component personnel in select HP2020 Objective variables.

Binge drinking is defined as four or more drinks (for women) or five or more drinks (for men) on a single occasion within the past 30 days. Cigarette smoking is defined as having smoked at least 100 cigarettes in one's lifetime, currently smoking, and having smoked in the past 30 days. Smokeless tobacco use is defined as using smokeless tobacco during the past 30 days.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Binge drinking: Q59; Cigarette use: Q70, Q73; Smokeless tobacco use: Q81 and Q83.

Approximately 8.7% of Total Reserve Component personnel classified as unhealthy drinkers. Of unhealthy drinkers, 22.1% are heavy drinkers, and 25.1% have an AUDIT score of 8 or higher (Figure 2). Approxiamtely 11% of personnel engage in high frequency binge drinking, compared to 26.9% of U.S. adults (NIH, 2014). Approximately 25% of unhealthy drinkers were identified as meeting more than one unhealthy drinking criterion, and 16.6% percent of Total Reserve personnel were categorized as having all three types of unhealthy drinking behavior.

Health and Social Consequences of Alcohol Consumption

Excessive drinking is associated with decreased work productivity and a number of social and health risk behaviors (Brown et at., 2007). Figure 3 displays the proportion of Total Reserve Component personnel who have experienced such consequences in the past 12 months. Six percent of Total Reserve personnel have experienced work-related productivity loss, such as arriving late or missing work because of drinking, and 4.3% have experienced social and health consequences, such as having a spouse threaten to leave because of their drinking. Approximately 7.3% of Total Reservists engaged in at least one type of drinking-related risky behavior, such as driving after drinking.

Experiencing negative consequences is more prevalent among unhealthy drinkers. Nearly 40% of unhealthy drinkers in the Total Reserve Component have engaged in at least one risky behavior event in the past 12 months, and a similar proportion has engaged in a productivity loss event, compared to 6.0% and 4.8% of moderate drinkers.

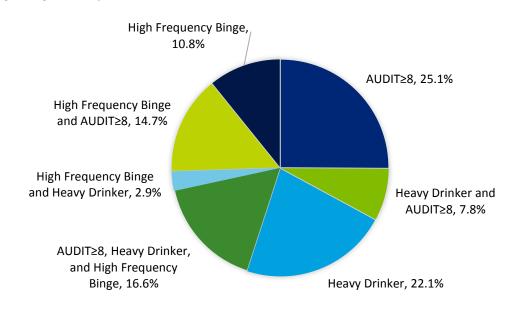


Figure 2: Types of Drinking Among Unhealthy Drinkers

Figure 2 displays the distribution of unhealthy drinking patterns among unhealthy drinkers in the Total Reserve Component.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, unhealthy drinking classification: Q4, Q45, Q47, Q48, Q55, Q56, Q57, Q58, and Q59.

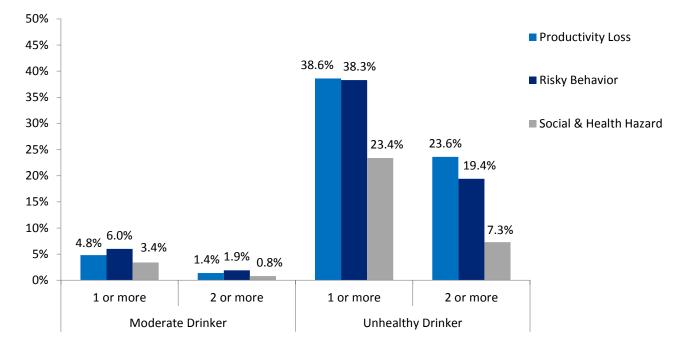


Figure 3: Negative Drinking Consequences, by Unhealthy Drinking Classification

Figure 3 displays the percentage of Totalf Reserve Component personnel, by unhealthy drinking classification, who reported experiencing a negative consequence one or more and two or more times.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, unhealthy drinking classification; negative consequences: Q52, Q53, and Q54.

Treatment for Alcohol Issues

The DoD has a priority to prevent and eliminate problematic substance use to maintain a ready force and offers evaluation as well as inpatient and outpatient treatment programs to personnel who meet certain entry criteria (Department of Defense, 2014). A number of other community resources exist for military personnel who may need counseling or treatment for excessive alcohol use. Among Total Reserve Component members, 7.3% of unhealthy drinkers report that they are likely to seek treatment in the next six months. Figure 4 presents the likelihood of using various forms of treatment and assistance for alcohol problems among unhealthy drinkers. Among unhealthy drinkers, Military One Source (53.0%) is the most likely source for help that personnel believe they would access, followed by Alcoholics Anonymous, at 49.7%.

Figure 4: Liklihood of Types of Treatments for Unhealthy Drinkers

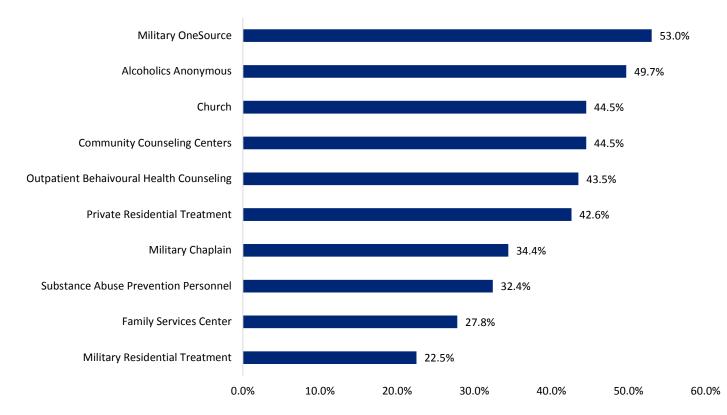


Figure 4 displays the percentage of Total Reserve Component personnel classified as unhealthy drinkers who indicated likelihood of using each form of treatment, if they were to seek assistance. The likely-to-use estimate comprises response choices "extremely likely," "very likely," and "somewhat likely."

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, unhealthy drinking level: Q4, Q45, Q47, Q48, Q55, Q56, Q57, Q58, and Q59; treatment options: Q66.

TOBACCO USE

Table 2 displays cigarette smoking and smokeless tobacco use prevalence among the Total Reserve Component. Approximately 11.2% of Total Reserve Component personnel currently smoke; 2013 results of the National Survey on Drug Use and Health (NSDUH) indicate that 17.9% of the U.S. civilian population are current smokers. Approximately 6.7% of Total Reserve Component members smoke daily (light/moderate and heavy smoking classifications both represent daily smoking). Sixty-nine percent of Total Reservists have never smoked.

Smokeless tobacco use is less prevalent among the Total Reserve Components than cigarette smoking. Seventy-five

percent of Total Reserve Component personnel have never used smokeless tobacco. Approximately 12% of Total Reserve Component personnel currently use smokeless tobacco; 5.4% report using smokeless tobacco on a daily basis. The 2013 NSDUH reports that 2.7% of U.S. civilians use smokeless tobacco.

Figure 5 displays the use of alternative forms of tobacco in the past 12 months among Total Reserve Component members. Sixteen percent of Total Reserve members report smoking a cigar, and 5.9% report smoking a pipe in the past 12 months. Eleven percent of Reserve and Guard personnel report smoking electronic cigarettes. Table 2: Cigarette Smoking and Smokeless Tobacco Classification

	Total Reserve Component
Smoking Classification	
Abstainer	68.9% (1.7)
Former	20.0% (1.4)
Infrequent	4.5% (1.0)
Light/Moderate	5.6% (0.6)
Неаvy	1.1% (0.3)
Smokeless Tobacco Classification	
Abstainer	74.5% (1.4)
Former	13.4% (0.9)
Infrequent	3.7% (1.0)
Light/Moderate	2.9% (0.5)
Неаvy	5.4% (0.7)

Table 2 displays the percentage of Total Reserve Component personnel who were classified in the cigarette and smokeless tobacco use levels indicated in the rows. The standard error is presented in parentheses.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Reserve Component: Q1, Cigarette smoking classification: Q70, Q73, and Q75; Smokeless tobacco level classification: Q81 and Q82.



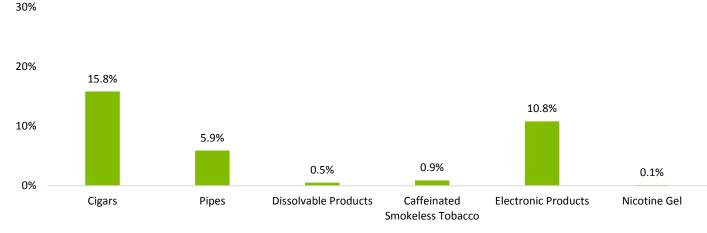


Figure 5 displays the percentage of Total Reserve Component personnel who reported use of tobacco products in the past 12 months.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Reserve Component: Q1; any nicotine use: Q72, Q82, Q87, and Q88.

Reasons for Smoking

Figure 6 displays the reasons that current Total Reserve Component smokers cite for smoking. Sixty percent of Total Reserve Component smokers report smoking cigarettes to help relieve stress, and 58.9% report smoking to relax or calm down. Other reasons include smoking while drinking alcohol (39.1%) and to to relieve boredom (35.9%).

Deterrents and Reduction

About one-quarter of Total Reserve Component cigarette smokers and smokeless tobacco users (26.6%;

26.9%) report that their immediate supervisor strongly discourages tobacco use; 20.4% of Total Reserve Component cigarette smokers and 20.0% of Total Reserve Component smokeless tobacco users report that their installation discourages tobacco use.

Figure 7 presents cessation methods that current cigarette smokers and smokeless tobacco users may use. Among current cigarette smokers, stopping all at once (30.6%), a gradual reduction approach (44.2%), and prescription medication (23.4%) are the most frequently

cited cessation methods. Smokeless tobacco users in the Total Reserve Component are most likely to indicate that they will stop all at once (38.0%) or use prescription medication (20.6%). The least likely methods of reduction among cigarette smokers and smokeless tobacco users are UCANQUIT2 online quit and TRICARE telephone quit counselor.

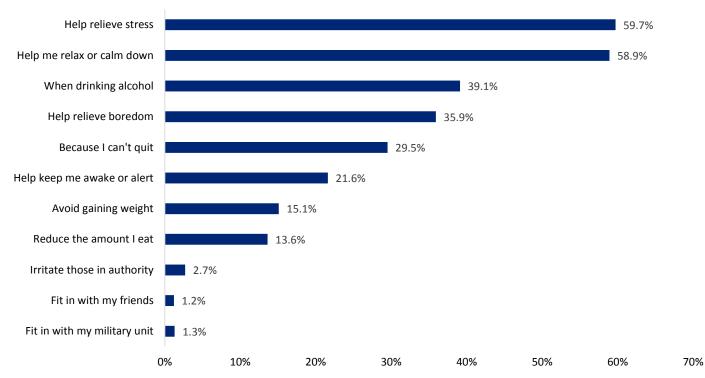


Figure 6: Reasons for Smoking among Current Smokers

Figure 6 displays the percentage of Total Reserve Component personnel, categorized as current cigarette smokers, who indicated the reasons for smoking cigarettes to be "very important" or "somewhat important."

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Current smokers: Q70, Q73, and Q75; Reasons for smoking: Q80.

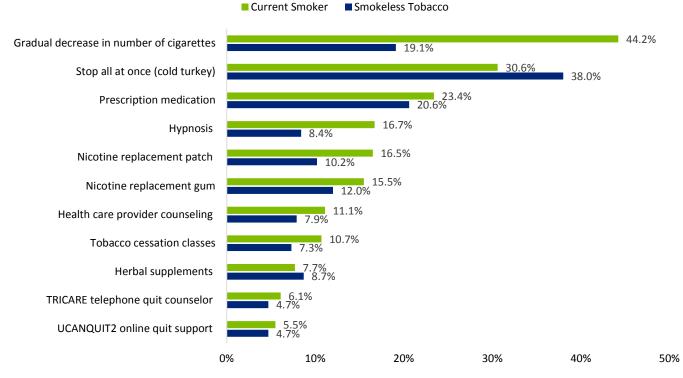


Figure 7: Likelihood of Using Reduction Methods among Current Cigarette Smokers and Smokeless Tobacco Users

Figure 7 displays the percentage of Total Reserve personnel, categorized as current smokeless tobacco users or current cigarette smokers, by the type of treatment or reduction method they are likely to use.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel; Current smokers: Q70, Q73; Current smokeless tobacco users: Q81, Q82; Treatment methods: Q90.

PHYSICAL ACTIVITY AND HEALTHY LIFESTYLE

To be eligible to enlist in the Reserves and to maintain compliance after enlisting, Reserve personnel must meet certain physical activity criteria. Criteria are based on age and gender and include completing push-ups, sit-ups, and running two miles (Air Force Personnel Center, 2015; Navy Fitness, 2015; Military Advantage, 2015) as indicators of overall physical health. This section explores physical health measures among the Total Reserve Component, including weight, exercise, nutrition, and protective health behaviors. Table 3 illustrates key physical health measures among the Total Reserve Component by sociodemographic characteristics.

Overview of Physical Activity and Healthy Lifestyle Measures

Overall, 30.9% of Total Reserve Component personnel are at a healthy weight, 67.7% meet physical activity targets, 91.9% have passed their most recent fitness test, and 47.5% have optimum sleep levels. Approximately 11.6% consume vegetables three or more times per day and 10.3% consume fruit three or more times per day. Some differences in healthy lifestyle behaviors are detected, with women being more likely than men to consume more fruit and vegetables, and have a healthy weight based on Body Mass Index classification (which is acknowledged to misclassify individuals with a high percentage of muscle, such as athletes and soldiers). Age group is also associated with healthier lifestyle measures, with fewer Reservists aged 25-34 meeting sleep targets than their older counterparts.

Demographics	Healthy Weight	Meet HP2020 Physical	Passed Most Recent Physical	Have Optimum Sleep Levels	Consume Vegetables Three or More	Consume Fruit Three or More
		Activity Target	Fitness Test		Times Per Day	Times Per Day
Component						
Total Reserve Component	30.9% (1.5)	68.7% (1.6)	91.9% (1.2)	47.5% (1.8)	11.6% (0.7)	10.3% (0.7)
Gender						
Male	26.5% (1.8) ²	68.8% (1.9) ²	92.1% (1.4)	47.5% (2.2)	9.7% (0.8) ²	9.1% (0.8) ²
Female	50.0% (1.7) ¹	$63.2\% (1.7)^1$	91.4% (1.4)	47.5% (1.8)	$19.7\% (1.2)^1$	$15.8\% (1.2)^1$
Race/Ethnicity						
Hispanic	35.4% (5.7)	66.5% (5.7)	88.3% (4.4)	45.4% (6.2)	7.7% (1.4)	9.1% (1.8)
White, non-Hispanic	29.3% (1.4)	69.4% (1.6)	92.1% (1.4)	49.0% (2.1)	11.8% (0.9)	9.9% (0.9)
Black, non-Hispanic	32.3% (5.0)	61.7% (4.8)	93.3% (1.9)	48.2% (5.1)	12.4% (2.1)	13.4% (2.4)
Asian, non-Hispanic	44.1% (6.5)	68.5% (5.7)	97.7% (0.9)	46.7% (7.3)	17.2% (5.8)	10.6% (4.4)
Two+ races, non-	28.6% (4.0)	64.1% (5.5)	95.7% (1.5)	33.4% (5.4)	13.8% (2.7)	10.3% (2.1)
Hispanic Other nen Uispania	20.00((5.4)		00 (0 0)	27 40((7 2)		
Other, non-Hispanic	20.9% (5.4)	64.1% (8.5)	88.6% (8.2)	27.4% (7.2)	13.1% (3.4)	4.6% (1.5)
Education High school or less	20.00/ (C.2)	F7 40((C O)	04 (0) (7 0)	FA 20((7 C)		0.20/ (2.5)
Some college	38.9% (6.3)	57.1% (6.8)	84.6% (7.0)	54.3% (7.6)	6.5% (2.2)	8.3% (2.5)
College graduate or	32.6% (2.4) 26.5% (1.2)	67.2% (2.4) 71.6% (1.3)	90.7% (1.8) ³ 95.5% (0.6) ²	43.0% (2.8) 51.3% (1.9)	10.0% (1.0) ³ 15.1% (1.1) ²	9.8% (1.1) 11.7% (0.9)
higher	20.5% (1.2)	/1.0% (1.3)	95.5% (0.0)	51.3% (1.9)	15.1% (1.1)	11.7% (0.9)
Age						
24 or younger	55.2% (6.0) ^{2,3,4}	64.8% (6.3)	82.1% (5.6)	52.2% (6.8)	7.5% (1.7)	8.1% (1.9)
25 – 34	33.5% (2.7) ^{1,4}	72.0% (2.6)	93.1% (1.2)	39.6% (3.0) ^{3,4}	14.2% (1.6)	11.1% (1.5)
35 – 44	24.0% (1.7) ¹	68.1% (1.9)	94.2% (1.0)	50.5% (2.3) ²	11.5% (1.1)	11.5% (1.3)
45 or older	17.5% (1.4) ^{1,2}	63.9% (2.2)	95.2% (1.0)	50.4% (2.6) ²	11.0% (1.0)	9.5% (1.1)
Family Status						
Not married	42.1% (3.1) ²	67.3% (3.0)	90.3% (2.2)	47.2% (3.7)	10.3% (1.0)	8.9% (1.0)
Married	23.5% (1.5) ¹	68.0% (1.7)	93.0% (1.4)	47.7% (1.9)	12.4% (0.9)	11.3% (1.0)
Pay Grade						
E1 – E3	48.3% (6.4) ^{3,4,6}	63.1% (6.5)	83.2% (5.4)	46.4% (7.4)	7.1% (1.7) ^{5,6}	7.5% (1.8)
E4 – E6	27.8% (1.6) ^{3,4}	68.9% (1.7)	92.5% (1.0) ^{3,4,5,6}	48.3% (2.1) ³	12.3% (1.1)	11.3% (1.1)
E7 – E9	19.2% (0.6) ^{1,2,5,6}	67.4% (0.8)	96.1% (0.3) ^{2,5,6}	42.6% (0.9) ^{5,6,2}	11.8% (0.5) ⁶	9.7% (0.5) ⁶
W1 – W5	19.3% (1.3) ^{1,2,5,6}	70.1% (1.5)	98.5% (0.4) ²	46.8% (1.8)	9.8% (1.0) ⁶	7.6% (0.9) ⁶
01-03 04-010	32.4% (1.2) ^{3,4,6}	70.5% (1.2)	96.2% (0.5) ^{2,3}	49.7% (1.4) ³	$14.1\% (0.8)^{1}$	10.0% (0.7)
04-010	26.6% (0.6) ^{1,3,4,5}	68.8% (0.7)	98.5% (0.2) ^{2,3}	50.4% (0.8) ³	15.4% (0.5) ^{1,3,4}	12.6% (0.5) ^{3,4}

Table 3: Sociodemographic Characteristics of Personnel in Healthy Lifestyle Categories

Table 3 displays the percentage of Total Reserve Component personnel, by sociodemographic characteristics, classified into healthy lifestyle measures. The standard error is presented in parentheses.

Statistical significance tests were conducted between all rows within the same demographic group for each healthy lifestyle measure. A superscripted number beside an estimate indicates that the estimate is statistically significantly different than the estimate that appears in the row number within the same demographic group. For example:

¹Indicates the estimate for meeting HP2020 Physical activity targets is statistically significantly different than the estimate in row #1 (Males) at the 95% confidence level after Bonferroni adjustment.

²Indicates the estimate for meeting HP2020 Physical activity targets is statistically significantly different than the estimate in row #2 (Females) at the 95% confidence level after Bonferroni adjustment.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Healthy weight: Q4, Q16, and Q17; Physical Activity Target: Q26 and Q27; Optimum Sleep Levels: Q151; Passed Most Recent Physical Test: Q42; Consume vegetables or fruits three or more times per day: Q34; Sociodemographic variables: Q1, Q3, Q4, Q12, Q13, Q14, Q15, Q18, and Q59.

Overview of Healthy Lifestyle Behaviors and Healthy People 2020 Targets

Figure 8 displays the prevalence of key healthy lifestyle measures and offers comparisons to Healthy People 2020 targets and Total Reserve Component estimates. Total Reserve personnel exceed the physical activity, higher levels of physical activity, low obesity level, seat belt use, and motorcycle helmet use HP2020 targets. Total Reserve Components do not meet the HP2020 target for healthy weight (it should be noted that this estimate is based on body mass index (BMI), which often misclassifies individuals with high muscle mass). Total Reserve Component personnel fall far below the HP2020 sleep target, with 47.5% of Total Reservists receiving optimum sleep levels, compared to the HP2020 target of 70.9%.

Weight Management

Overall, 30.9% of Total Reserve Component personnel are classified with a healthy weight according to BMI calculations. BMI is a standard measure that considers age, gender, height, and weight to categorize individuals into underweight, healthy weight, overweight, and obese categories (CDC Division of Nutrition, Physical Activity, Obesity, 2015). The distribution of BMI categories for Total

Figure 8: Healthy Lifestyle Indicators and HP2020 Objective Targets

Reserve Component personnel differs by gender. Women are twice as likely as men to be at a healthy weight (50.0% vs. 26.5%), and three-quarters of male Reservists (72.3%) are overweight or obese, compared to about half of women (48.1%).ⁱ

Physical Activity

National physical activity guidelines recommend 150 minutes of moderate physical activity or 75 minutes of vigorous physical activity per week, or a mixture of both. This is considered enough physical activity to gain considerable health benefits. Additional and more extensive benefits can be achieved through higher levels of physical activity. To achieve these benefits, adults should engage in 300 minutes of moderate intensity or 150 minutes of vigorous intensity, or an equivalent combination of both (Health.gov Physical Activity Guidelines, 2008). Approximately 68.7% of Total Reserve Component personnel meet the baseline physical activity guidelines, and 57.0% of Total Reserve Component personnel meet the higher levels of physical activity target.

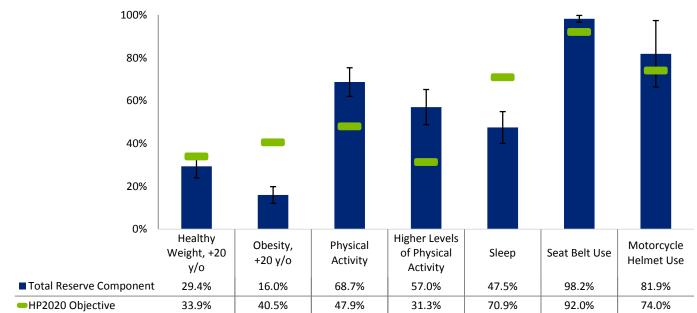


Figure 8 displays the percentage of Total Reserve Component personnel in select HP2020 Objective variables.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Healthy weight and obesity among those 20 years or older: Q4, Q15, Q16, Q17; Physical activity: Q26 and Q27; Sleep: Q15 and Q151; Seat belt use: Q115; Motorcycle helmet use: Q118a.

Table 4: Body Mass Index Classification by Gender

BMI Index by Gender	Total Reserve Component
Male	
Underweight	1.2% (0.9)
Healthy weight	26.5% (1.8)
Overweight	55.6% (1.9)
Obese	16.7% (1.1)
Female	
Underweight	1.9% (0.7)
Healthy weight	50.0% (1.7)
Overweight	39.1% (1.6)
Obese	9.0% (1.1)

Table 4 displays the percentage of Total Reserve personnel, by gender, who were classified into BMI categories. The standard error is presented in parentheses. Body Mass Index categorizations are calculated based on self-reported age, weight, and height.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Reserve Component: Q1; Gender: Q4; BMI: Q15, Q16, Q17.

Dietary Intake

National nutritional guidelines encourage the consumption of fruits and non-starchy vegetables to improve overall health (Dietary Guidelines, 2010). Overall, 11.6% of Total Reserve Component personnel consume vegetables three or more times a day. Ten percent of Total Reserve personnel consume fruit three or more times a day. Gender is associated with healthy eating habits, as significantly more female Reserve personnel report eating fruit and vegetables three times a day than males (15.8% vs. 9.1% and 19.7% vs. 9.7%).

Overall Physical Health

Figure 9 displays the frequency with which poor physical health has kept personnel from usual activities in the past 30 days. Seventy-seven percent of Total Reserve Component personnel have not abstained from usual activities due to poor physical health, compared to 8.7% who report being kept from usual activities once a week or more due to poor physical health.

Table 5 displays data on medical care and diagnoses. Seventy-four percent of Total Reserve Component personnel are current on annual health assessments. Approximately 8.2% of Total Reserve Component personnel have been diagnosed with high blood pressure, and 8.9% have been diagnosed with high cholesterol.

Figure 9. Frequency with Which Poor Physical Health Kept Personnel from Usual Activities in the Past 30 Days

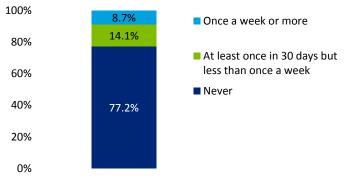


Figure 9 displays the percentage of Total Reserve Component personnel who were unable to perform their usual activities due to poor physical health in the past 30 days, by number of times they were kept from usual activities.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Service Component: Q1, Impact of poor physical health: Q4

Table 4: Receipt of Medical Care and Health Condition Diagnoses

Health Measure	Total Reserve Component
Receipt of Preventative Health	
Yes, Current on Annual Health Assessments	74.0% (1.7)
Diagnosed Health Condition in Past Two	
Years	
High Blood Pressure	8.2% (0.9)
High Blood Sugar	1.9% (0.4)
High Cholesterol	8.9% (0.7)
Low HDL Cholesterol (Good Cholesterol)	5.5% (0.5)
High Triglycerides (Blood Fat)	4.9% (0.5)

Table 5 displays the percentage of Total Reserve Component who received preventative health care and who were diagnosed with select health conditions in the past two years. The standard error is presented in parentheses.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Service Component: Q1; Annual health assessment: Q39; Heart-related diseases: Q33.

STRESS AND MENTAL HEALTH

Stress and Mental Health Overview

Stressors for military personnel can lead to stress at work or in family and intimate relationships, anxiety, depression and other mental health disorders (Bray et al, 2009). Research suggests that work, family, and finances as well as mental health problems like anxiety, depression and post traumatic stress disorder (Bray et al, 2006) are common stressors for military personnel. These stressors can be intensified for Reservists, who often balance their military career with a civilian job (Bray, 2007).

Table 6 presents the prevalence of key mental health measures by sociodemographic characteristics. According to self-reported symptoms, 23.7% of Total Reserve Component personnel are classified as having high stress levels, 4.8% are classified with high levels of depression, and 9.3% are classified with high anxiety levels. Approximately 3.7% of Total Reserve Component personnel have attempted suicide in their lifetime. The prevalence of high stress, depression, and anxiety is higher among females than males.²

Table 5: Sociodemographic Characteristics of Personnel in Stress and Mental Health Categories

Demographics	High Overall Stress Level	High Depression Level	High Anxiety Level	Attempted Suicide	
Component					
Total Reserve Component	23.7% (1.4)	4.8% (0.5)	9.3% (0.8)	3.7% (1.0)	
Gender					
Male	22.6% (1.7) ²	4.2% (0.6) ²	8.5% (0.9) ²	3.2% (1.2)	
Female	28.6% (1.7) ¹	7.1% (0.9) ¹	12.6% (0.9) ¹	5.6% (1.1)	
Race/Ethnicity					
Hispanic	16.1% (2.9)	3.7% (0.9)	5.7% (1.2)	7.4% (4.8)	
White, non-Hispanic	26.2% (1.8)	4.7% (0.7)	9.7% (1.0)	1.5% (0.4)	
Black, non-Hispanic	19.0% (3.2)	5.2% (1.3)	8.0% (1.9)	6.9% (2.4)	
Asian, non-Hispanic	19.7% (5.5)	3.3% (1.2)	14.4% (5.4)	7.4% (4.9)	
Two+ races, non-Hispanic	33.4% (6.0)	5.1% (1.6)	17.4% (5.2)	6.6% (4.7)	
Other, non-Hispanic	27.1% (8.2)	19.1% (9.0)	10.0% (5.0)	1.7% (1.1)	
Education					
High school or less	13.7% (3.6)	1.9% (0.7)	4.8% (1.8)	1.1% (0.7)	
Some college	27.1% (2.4)	5.9% (1.0)	10.5% (1.3)	5.4% (1.8)	
College graduate or higher	22.4% (1.3)	4.2% (0.6)	9.0% (1.0)	2.2% (0.6)	
Age					
24 or younger	21.6% (5.2)	5.8% (1.9)	5.2% (1.4)	8.8% (4.9)	
25 – 34	24.9% (2.5)	3.7% (0.9)	10.3% (1.6)	2.7% (0.9)	
35 – 44	22.9% (1.7)	4.8% (0.8)	10.0% (1.3)	3.0% (0.8)	
45 or older	24.8% (2.1)	5.3% (1.0)	10.0% (1.5)	2.0% (0.5)	
Family Status					
Not married	20.4% (2.1)	5.5% (1.0)	8.7% (1.2)	5.6% (2.3)	
Married	25.9% (1.8)	4.3% (0.6)	9.6% (1.0)	2.5% (0.5)	
Pay Grade					
E1 – E3	16.1% (4.7)	3.3% (1.3)	4.0% (1.2) ^{2,3,4}	6.6% (4.2)	
E4 – E6	25.6% (1.8)	5.5% (0.9)	11.5% (1.3) ¹	3.8% (0.8)	
E7 – E9	27.3% (0.8)	5.3% (0.4)	10.5% (0.6) ^{6,1}	1.9% (0.2)	
W1-W5	24.9% (1.6)	5.0% (0.8)	9.9% (1.1) ¹	1.8% (0.5)	
01-03	25.1% (1.2)	3.7% (0.5)	7.8% (0.7)	1.3% (0.3)	
04-010	24.6% (0.7)	3.6% (0.3)	7.8% (0.4) ³	1.1% (0.2)	

Table 6 displays the percentage of Total Reserve Component personnel, by sociodemographic characteristics, who classify as having high overall stress levels, high anxiety, high depression, and have attempted suicide in their lifetime as indicated in the columns. The standard error is presented in parentheses.

Statistical significance tests were conducted between all rows within the same demographic group for each mental health category. A superscripted letter beside an estimate indicates that the estimate is statistically significantly different than the estimate that appears in the row number within the same demographic group. For example:

¹Indicates the estimate for high overall stress level is statistically significantly different than the estimate in row #1 (Males) at the 95% confidence level after Bonferroni adjustment.

²Indicates the estimate for high overall stress level, high overall depression level, and high overall anxiety level is statistically significantly different than the estimate in row #2 (Females) at the 95% confidence level after Bonferroni adjustment.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Demographics: Q1, Q3, Q4, Q12, Q13, Q14, Q15, and Q18, Stress: Q127 and Q128, Depression: Q133, Anxiety: Q134, Suicide attempts: Q147.

Stress

Nearly one-quarter of Total Reserve Component members (23.7%) report high levels of stress. Figure 10 displays the frequency with which Total Reserve personnel experience select events that cause them stress. The most frequently cited military-related sources of stress include changes in work load (24.0%), conflicts between military and personal responsibilities (22.4%), and being away from family and friends (20.7%). The most frequently cited personal stressor among Total Reserve Component personnel is problems with money (27.9%), followed by health problems of personnel and their families (14.3% and 16.3%).

Figure 10. Percentage of Personal- and Military-Related Stressful Events Among Total Reserve Component Personnel

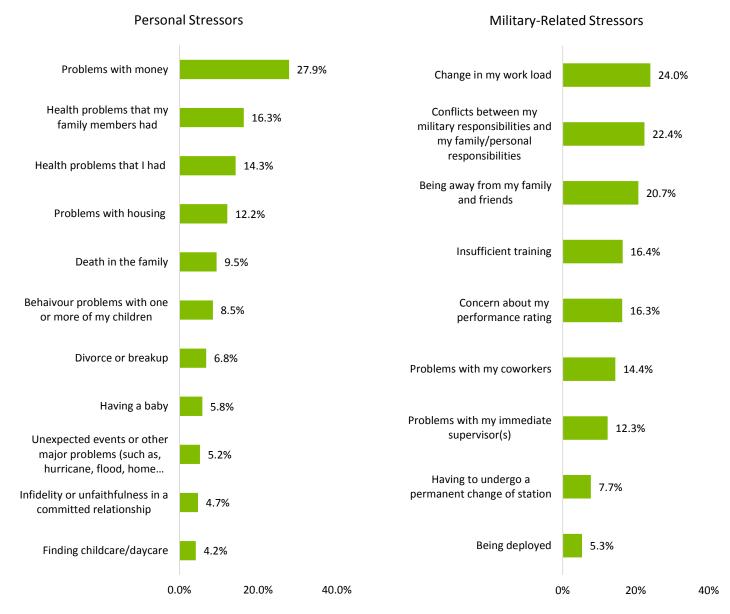


Figure 10 displays the percentage of Total Reserve Component personnel, who report experiencing a lot or some stress from each of the events listed in the rows.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Reserve Component: Q1, Stress events: Q129 and Q132

Depression, Anxiety, Attempted Suicide

Figure 11 represents the prevalence of high depression, high anxiety, and lifetime attempted suicide among personnel with various levels of combat exposure. Approximately 5.4% Total Reserve Component personnel with high combat exposure report high depression levels, and 7.3% with moderate combat exposure report high depression levels, compared to 2.7% and 3.7% with low or no combat exposure, respectively. The prevalence of high anxiety among Total Reserve personnel is higher among those with high and moderate combat exposure (15.2% and 12.2%), compared to those with low or no combat exposure (5.4% and 6.1%). Four percent of Total Reserve Component with high combat exposure, 2.7% with moderate combat exposure, 1.2% with low combat exposure, and 4.3% with no combat exposure have attempted suicide in their lifetime.

DEPLOYMENT

Since September 11, 2001, more than 2.4 million military personnel have deployed to Iraq and Afghanistan (Spelman et al., 2012). Deployment is a fundamental aspect

of military service, and most service members return from deployment with a sense of satisfaction. The nature and objective of military missions has been highly variable during recent decades, and this variability, as well as the burden of working in dangerous situations, places demands on behavioral and mental health.

Table 7 presents estimates of deployment experiences, post-traumatic stress (PTS), and possible traumatic brain injury (TBI) among Total Reserve Component personnel.

Approximately one-third of Total Reserve Component personnel have been non-combat deployed in the past 12 months (33.5%), and 23.3% have been combat deployed in the past two years.

Thirty-nine percent of Total Reserve Component personnel report high combat exposure. Of Total Reserve Component personnel, men are significantly more likely than women to have high levels of combat exposure (42.6% vs. 19.8%), and are more likely to report a possible TBI (13.1% vs. 7.5%). Despite these differences, women report a similar rate of high PTS (3.5% vs. 3.3%).

Figure 11: High Depression Level, High Anxiety Level, and Attempted Suicide by Levels of Combat Exposure

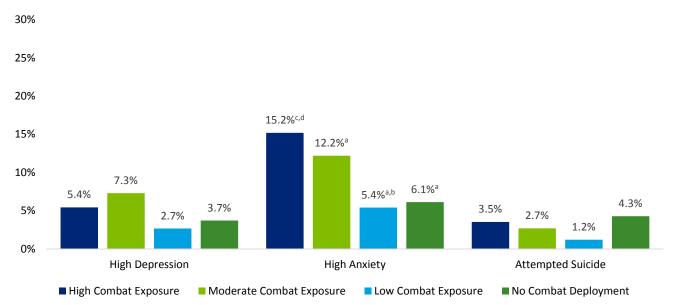


Figure 11 displays the percentage of Total Reserve Component personnel by each level of combat exposure who are classified with a high depression level, high anxiety level, and who have attempted suicide in their lifetime.

Statistical significance tests were conducted between all rows within the same mental health variable for each combat exposure-related category. A superscripted letter beside an estimate indicates that the estimate is statistically significantly different than the estimate that appears in the bar number within the same variable. For example:

^aIndicates the estimate for anxiety in low combat exposure is statistically significantly different than the estimate in bar #1 (High Level of Combat Exposure) at the 95% confidence level after Bonferroni adjustment.

^bIndicates the estimate for anxiety in low combat exposure is statistically significantly different than the estimate in bar #2 (Moderate Level of Combat Exposure) at the 95% confidence level after Bonferroni adjustment.

^cIndicates the estimate for anxiety in high combat exposure is statistically significantly different than the estimate in bar #3 (Low Level of Combat Exposure) at the 95% confidence level after Bonferroni adjustment.

^dIndicates the estimate for anxiety in high combat exposure is statistically significantly different than the estimate in row #4 (No Combat Exposure) at the 95% confidence level after Bonferroni adjustment.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Combat exposure: Q173, Depression: Q133, Anxiety: Q134; Attempted Suicide: Q147.

Table 6: Personnel in Select Den	ployment Categories by	y Sociodemographic Characteristics	
Table 0. Tersonner in Select Dep	proyment categories by	y socioacinographic characteristics	

Sociodemographics	Non-Combat Deployment in Past 12 months	Combat Deployment in Past 2 Years	High Combat Exposure	High PTS	Possible TBI
Component					
Total Reserve Component	33.5 (2.1)	23.3% (1.4)	39.0% (1.7)	3.2% (0.5)	12.2% (1.3)
Gender					
Male	34.1% (2.5) ²	23.2% (1.6) ²	42.6% (1.9) ²	3.3% (0.7)	13.1% (1.5) ²
Female	30.1% (2.0) ¹	23.5% (1.5) ¹	19.8% (1.4) ¹	3.5% (0.5)	7.5% (0.9) ¹
Race/Ethnicity					
Hispanic	36.6% (6.0)	24.6% (3.9)	30.2% (4.1) ²	1.3% (0.4)	13.6% (3.8)
White, non-Hispanic	32.2% (2.5)	23.3% (1.8)	40.9% (2.0) ¹	3.5% (0.7)	10.5% (1.4)
Black, non-Hispanic	38.3% (7.0)	22.7% (4.1)	32.5% (5.0)	2.9% (1.0)	16.4% (4.7)
Asian, non-Hispanic	46.1% (13.2)	21.5% (5.9)	53.1% (9.1)	6.9% (4.9)	21.2%(10.9)
Two+ races, non-Hispanic	27.2% (6.1)	21.9% (4.1)	33.2% (7.7)	7.0% (4.8)	18.5% (7.8)
Other, non-Hispanic	28.9% (14.1)	23.7% (9.2)	54.6% (12.2)	6.2% (4.9)	13.0% (7.3)
Education					
High school or less	43.0% (12.9)	25.8% (6.7)	27.9% (6.9) ^{2,3}	+	4.7% (1.3) ^{2,3}
Some college	34.2% (3.6)	22.5% (2.3)	43.3% (2.7) ¹	4.3% (0.9)	17.7% (2.4) ¹
College graduate or higher	31.8% (2.3)	23.7% (1.6)	36.1% (1.9) ¹	2.7% (0.7)	7.5% (1.1) ¹
Age					
24 or younger	+	62.8% (12.8) ^{2,3,4}	16.0% (8.7) ^{2,3,4}	2.8% (1.2)	12.5% (9.4) ^{2,3,4}
25 – 34	37.5% (5.4)	20.8% (2.8) ^{1,4}	37.5% (3.5) ¹	4.0% (1.2)	13.1% (2.6) ¹
35 – 44	28.3% (2.9)	21.0% (2.0) ¹	38.8% (2.7) ¹	2.8% (0.7)	13.5% (2.3) ¹
45 or older	35.8% (2.9)	26.7% (2.4) ^{1,2}	41.6% (2.5) ¹	3.4% (1.1)	10.1% (1.7) ¹
Family Status					
Not married	30.8% (3.9) ²	28.9% (3.0) ²	35.5% (3.2) ²	3.4% (0.9)	14.1% (2.8)
Married	34.5% (2.5) ¹	21.2% (1.5) ¹	40.2% (1.9) ¹	3.3% (0.7)	11.5% (1.4)
Pay Grade					
E1 – E3	+	+	+	1.2% (0.5)	+
E4 – E6	34.1% (3.8) ^{3,6}	23.3% (2.3) ⁴	39.8% (2.7) ^{3,4}	4.7% (1.0)	14.6% (2.1)
E7 – E9	30.1% (1.3)	22.4% (0.9)	39.9% (1.1) ^{2,5}	3.0% (0.3) ⁶	11.5% (0.7) ^{5,6}
W1-W5	32.5% (2.8)	24.3% (1.7) ²	43.4% (2.0) ^{2,5}	2.3% (0.6)	8.7% (1.1)
01-03	37.5% (2.6) ⁶	26.6% (1.7)	38.5% (1.8) ^{3,4,6}	2.0% (0.4)	7.1% (1.0) ³
O4-010	29.6% (1.0) ^{2,5}	21.4% (0.7)	36.1% (0.9) ⁵	1.5% (0.2) ³	6.0% (0.4) ³

Table 7 displays the percentage of Total Reserve Component personnel, by sociodemographic characteristics, classified into the deploymentrelated categories as indicated in the columns. The standard error is presented in parentheses.

Statistical significance tests were conducted between all rows within the same demographic group for each deployment-related category. A superscripted letter beside an estimate indicates that the estimate is statistically significantly different than the estimate that appears in the row number within the same column. For example:

¹Indicates the estimate for high PTS is statistically significantly different than the estimate in row #1 (male) at the 95% confidence level after Bonferroni adjustment.

²Indicates the estimate for high PTS is statistically significantly different than the estimate in row #2 (female) at the 95% confidence level after Bonferroni adjustment.

³Indicates the estimate for high PTS is statistically significantly different than the estimate in row #3 (College graduate or higher) at the 95% confidence level after Bonferroni adjustment.

⁺Data not reported. Low precision.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Demographics: Q1, Q3, Q4, Q12, Q13, Q14, Q15, Q18, Q171, Q177, High combat exposure: Q136B, Q136D, Q136E and Q136F, Q173A-Q, Q161A-F, Q165A-H, Q167A-G.

Post-Traumatic Stress and Traumatic Brain Injury

Three percent of Total Reserve Component personnel report high PTS, and approximately 12.2% of Total Reserve personnel have a possible TBI.

Traumatic Brain Injury is associated with PTS. Research suggests a link between the two conditions, which often coexist as brain injuries occur during traumatic events that can be a source of PTS (Bryant, 2011). Of Total Reserve personnel who have high PTS, 58.1% have a possible TBI,

about six times greater than the estimate of TBI among those with low PTS (Figure 12).

Figure 13 presents the association between TBI and combat exposure; 80.3% of Total Reserve Component members with a possible TBI have a high combat exposure, which is greater than Total Reserve Component members with moderate, low, or no combat exposure (17.1%, 1.0%, and 1.5%).

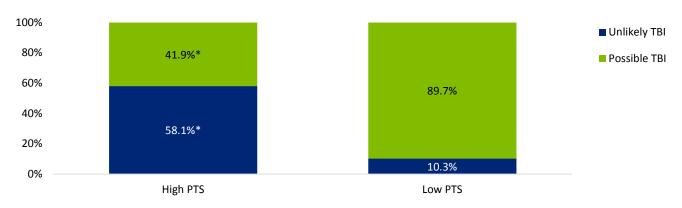


Figure 12: Post-Traumatic Stress Level by Likelihood of Traumatic Brain Injury

Figure 12 displays the percentage of Total Reserve Component members by PTS level who have a possible or unlikely TBI.

An asterisk (*) indicates that the high PTS estimate is statistically significantly different than the low PTS at the 95% confidence level after Bonferroni adjustment.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, TBI: Q161A-F, Q165A-H, Q167A-G, PTS: Q136B, Q136D, Q136E, Q136F.



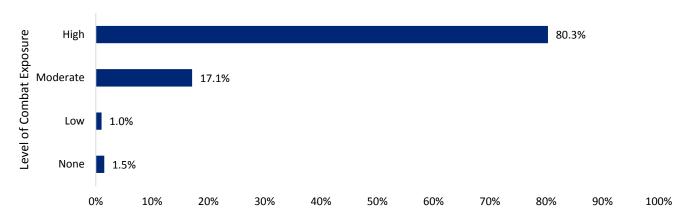


Figure 13 displays the percentage of Total Reserve Component personnel with a possible TBI who have a level of combat exposure listed in the rows.

Source: 2014 Health Related Behaviors Survey of Reserve Component personnel: Q1, TBI: Q161A-F, Q165A-H and Q167A-G; Combat exposure: Q173A-Q.

Impact of Deployment on Stress and Mental Health

Approximately 26.5% of Total Reserve Component members report feeling a great deal or a fairly large amount of stress upon returning home from their most recent deployment. As shown in Figure 14, Total Reserve Component personnel whose most recent deployment was to a combat zone are more likely to report feeling stress upon returning home from their most recent deployment than those who most recently deployed to a non-combat region (31.3% vs. 12.4%).

Figure 15 presents estimates of Total Reserve Component members' inability to deploy in the past 12 months across indicators of stress, anxiety, and depression. Members of Total Reserve Components with high stress levels are more likely to be unable to deploy than their counterparts with low stress levels (17.7% vs. 11.3%), though the difference is not statistically significant. Similarly, 21.4% with high anxiety are unable to deploy as compared with 12.1% with low anxiety. Among Total Reserve Component members with depression, those with high depression are more likely to be unable to deploy than those with low depression (31.6% vs. 12.1%).

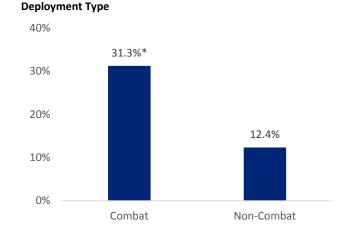


Figure 14: Stress upon Returning Home from Deployment by

Figure 14 displays the percentage of Total Reserve Component personnel by deployment type who indicated they felt stress upon returning home from their most recent deployment.

An asterisk (*) indicates that the combat deployment estimate is statistically significantly different than the non-combat deployment estimate.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Deployment Type: Q160; Stress: Q16

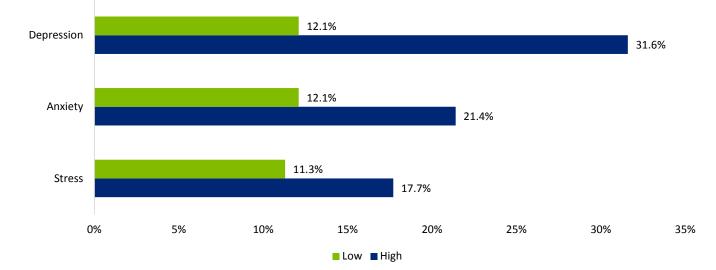


Figure 15: Inability to Deploy in Past 12 Months and Mental Health Indicators

Figure 15 displays the percentage of Total Reserve Component personnel who were unable to deploy in the past 12 months, by stress, anxiety and depression level.

An asterisk (*) indicates that the combat deployment estimate is statistically significantly different than the non-combat deployment estimate at the 95% confidence level after Bonferroni adjustment.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Q1, Inability to deploy: Q152, Stress: Q127 and Q128, Anxiety: Q134A-D; Depression: Q133C and Q133E.

Deployment and Substance Use

Table 8 presents results on the relationship between substance use and combat exposure and theaters of

operation. Among all substances, use of tobacco products is most frequently increased during combat deployment.

Table 7. In concern to find the second distance	- March David David - Jacob In		d The state of Output the
Table 7: Increase in Substance Use durin	g Most Recent Deployment, b	y Level of Combat Exposure an	d Theater of Operation

				Substances			
	Alcohol	Cigarettes	Chewing/ smokeless tobacco	Cigars	Prescription medications	Marijuana	Opium, heroin, morphine etc.
Type of Most Recent Deployment							
Non-Combat Combat	5.5% (1.0) 3.3% (0.7)	7.3% (2.0) ² 15.1%(1.6) ¹	3.6% (1.4) ² 10.3% (1.5) ¹	3.5% (0.9) ² 9.4% (0.9) ¹	2.5% (0.7) 4.1% (0.7)	0.3% (0.2) 0.2% (0.1)	0.3% (0.2) 0.2% (0.1)
Level of Combat Exposure							
High Moderate	3.4% (1.0) 3.5% (1.0)	16.5% (2.4) 13.2% (2.1)	11.0% (2.0) ³ 9.3% (2.1) ³	10.3% (1.5) ^{3,4} 8.5% (1.2) ^{3,4}	4.8% (1.3) 4.0% (0.7) ³	0.2% (0.1) 0.2% (0.1)	0.1% (0.1) 0.2% (0.1)
Low None	4.2% (1.2) 5.5% (0.9)	7.4% (2.5) 6.8% (2.8)	1.8% (0.5) ^{1,2} 5.2% (2.8)	3.4% (0.6) ^{1,2} 1.8% (0.5) ^{1,2}	1.2% (0.3) ² 2.3% (0.7)	 0.5% (0.3)	0.1% (0.0) 0.6% (0.3)
Theater of Operations, since 9/11	. ,					. ,	
Served in Operations Iraqi Freedom, Enduring Freedom, or New Dawn	3.4% (0.6)	14.3% (1.5) ²	9.4% (1.3) ²	8.8% (0.8) ³	4.1% (0.7)	0.2% (0.1)	0.2% (0.1)
Did not serve in Operations Iraqi Freedom, Enduring Freedom, or New Dawn	5.5% (2.8)	4.0% (1.3) ¹	1.2% (0.5) ¹	6.5% (2.8)	2.1% (0.6)	0.1% (0.1)	0.1% (0.1)
Not combat deployed since 9/11	5.5% (0.9)	6.8% (2.8)	5.2% (2.8)	1.8% (0.5) ¹	2.3% (0.7)	0.5% (0.3)	0.6% (0.3)

Table 8 displays the percentage of Total Reserve Component personnel, by type of deployment, level of combat exposure, and theater of operations, who indicated an increase in the substances listed in the columns. The standard error is presented in parentheses.

Statistical significance tests were conducted between all rows within the same demographic group for each deployment-related category. A superscripted letter beside an estimate indicates that the estimate is statistically significantly different than the estimate that appears in the row number within the same column. For example:

¹Indicates the estimate for alcohol is statistically significantly different than the estimate in row #1 (High Level of Combat Exposure) at the 95% confidence level after Bonferroni adjustment.

²Indicates the estimate for alcohol is statistically significantly different than the estimate in row #2 (Moderate Level of Combat Exposure) at the 95% confidence level after Bonferroni adjustment.

³Indicates the estimate for alcohol is statistically significantly different than the estimate in row #3 (Low Level of Combat Exposure) at the 95% confidence level after Bonferroni adjustment.

⁴Indicates the estimate for alcohol is statistically significantly different than the estimate in row #4 (No Combat Exposure) at the 95% confidence level after Bonferroni adjustment.

Source: 2014 Health Related Behaviors Survey of Reserve Component Personnel, Type of deployment: Q160, Change in substance use behavior during most recent deployment: Q166; Combat Exposure: Q136B, Q136D, Q136E and Q136F, Theater of Operations: Q169 and Q15

CONCLUSIONS

The purpose of this report is to provide an overview of health behaviors among Total Reserve Component personnel based on results from the Health Related Behaviors Survey of Reserve Component Personnel to present leadership with data to support policy and program development and change decisions. Specifically, these results can be used to identify current areas of strength in health behavior and areas for continued improvement to better impact the health and readiness of Reserve Component members. A summary by health behavior domain is provided below.

Substance Use

Approximately 30.8% of Total Reserve Component personnel report binge drinking in the last month, which exceeds the Healthy People 2020 target of 24.4%. Moreover, 8.6% of Total Reserve Component personnel are classified as unhealthy drinkers. This level of drinking generally indicates an increased risk of harmful consequences to self and others.

Survey results suggest that if unhealthy drinkers in the Reserves were to seek help for alcohol issues, they would be most likely to use Military OneSource, suggesting a possible benefit of reviewing the resources and guidance provided through Military OneSource and the opportunity to reach the drinkers who most need assistance.

The Department of Health and Human Services has identified tobacco use as a major public health concern, and has established Healthy People 2020 objectives to decrease the prevalence of cigarette smoking to 12.0% and smokeless tobacco use to 0.3% by 2020 (HHS, 2015). The estimated prevalence of cigarette smoking falls below this target, with 11.2% of Reserve and Guard personnel smoking cigarettes (95% CI: 8.8 – 13.6). Prevalence of smokeless tobacco is well above the Healthy People 2020 target, with 10.7% of Reservists using smokeless tobacco.

When asked about their reasons for smoking cigarettes, nearly sixty percent of Total Reserve Component personnel report smoking to relieve stress and to relax or calm down (59.7% and 58.9%). Approximately 35.9% smoke to relieve boredom, and 39.1% smoke while drinking alcohol. In terms of deterrents to smoking and encouraging reduction attempts, survey results suggest that most tobacco users do not believe that tobacco use is discouraged on their installation or that it is discouraged by their supervisors. Relatively few tobacco users indicate that they would use cessation classes or counseling, including the TRICARE telephone and online counseling and support.

Physical Activity and Healthy Lifestyle

Results from the analysis of physical health and healthy lifestyle measures indicate that Reserve personnel have good physical fitness, with 91.9% having passed their physical fitness test, and 68.7% meeting physical activity recommendations. Total Reserve members also meet or nearly meet Healthy People 2020 safety indicators, with nearly 98.2% reporting regular seat belt use and nearly 81.9% reporting motorcycle helmet use. Most Total Reserve members fall below the sleep recommendations, with less than half (47.5%) reporting meeting the Healthy People 2020 target.

Stress and Mental Health

Approximately one quarter of Total Reserve members experience high stress (23.7%); some of the most prevalent stressors are problems with money, changes in workload, and conflicts between military and personal obligations. Approximately 9.3% of Reservists report experiencing high anxiety and 4.8% report high depression. These estimates are higher among women than men. Finally, 3.7% of Total Reserve Component personnel report having attempted suicide in their lifetimes.

Deployment

Approximately 33.5% of Total Reserve Component personnel have been non-combat deployed in the past 12 months, and 23.3% of personnel have been combat deployed in the past two years. Results suggest that those with higher stress, anxiety, and depression levels are less likely to be able to deploy than those with low levels. In addition, results show that personnel returning from combat deployment experience significantly higher stress than those returning from non-combat deployment (31.3% vs. 12.4%).

Strengths and Special Areas for Attention

Strengths and areas for attention for Total Reserve Component health behaviors are similar to that of the individual Components. Although there are some areas for attention, overall health behaviors among Total Reserve Component personnel have several strengths. First, Total Reserve Component personnel display excellent physical health, with 91.9% passing their most recent physical test, and over half meeting HP2020 standards for physical activity. Reserve and Guard personnel also meet or exceed HP2020 targets for safety issues including seat belt and helmet use.

The foremost area for attention is mental health. High stress and high anxiety levels appear to be the most prevalent mental health issues among reservists, at 23.7% and 9.3%, respectively. Results suggest that those with

higher stress, anxiety, and depression levels are less likely to be able to deploy than those with low levels. Total Reserve Component personnel also fall under the HP2020 target for optimum sleep, with only 47.5% meeting the standard, compared to the HP2020 target of 70.9%. According to a Centers for Disease Control and Prevention study on the insufficient sleep among adults, chronic sleep insufficiency can manifest in reduced productivity and impaired physical and mental health (Centers for Disease Control, 2009).

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Appendix I. 2014 Health Related Behaviors Survey of Reserve Component Personnel Survey Methodology



BACKGROUND

The 2014 HRB Reserve Component Survey is modelled on the HRB Survey conducted among military personnel for more than 30 years and among the Reserve Component since 2006. The Department of Defense (DoD) initiated the HRB Survey in 1980 to guide program and policy development based on an improved understanding of the nature, causes and consequences of substance use in the military. The analysis of the survey results was guided by research objectives that assess the prevalence, nature, and characteristics of health related behaviors. This appendix provides methodological information about survey administration, data preparation and analysis, and reporting.

METHODOLOGY

Survey Instrument

The 2014 HRB Reserve Component Survey was based on the 2011 HRB Active Duty Survey. The 2011 HRB Active Duty Survey represented a new instrument with considerable changes to streamline the instrument and tailor it for a web distribution. This new format substantially eased respondent burden as it enabled the use of skip logic which dynamically updates the instrument based on selections.

Deloitte revised the 2011 HRB Active Duty Survey instrument slightly to make the questionnaire appropriate for the Reservist population and to update it based on current priorities.

Study Population

The eligible population includes all non-activated, military Reserve personnel from six Components: Navy Reserve, Army Reserve, Navy Reserve, Air National Guard, Air Force Reserve, and the Marine Corps Reserve. The eligible population did not include:

- Recruits, service academy students, personnel absent without official leave (AWOL), or personnel incarcerated at the time of data collection
- Reservists deployed at the time of the data collection, as these individuals are considered to be on Active Duty
- Full-time Reserve Unit Support, Individual Ready Reserve, or retired Reserve Component personnel.

The geographic boundaries of the study population included those living within the continental United States, including the American territories of Puerto Rico, Guam, American Samoa, and the Virgin Islands.

Survey Sampling

In 2011, DHA changed the mode of administration among the Active Duty population to a web-based format, which eliminated the need for geographically clustered sample and resulted in the introduction of a stratified sample. Consistent with the sampling approach for the 2011 Active Duty survey, the 2014 HRB Reserve Component Survey utilized a web-

based approach with a non-proportional, stratified random sample. The following variables were used for stratification purposes: Reserve Component, gender, and pay grade, for a total of 72 possible strata. The six Components were considered primary strata for sampling. Disproportionate stratified sampling provides the greatest advantage in the ability to study the responses of subgroups.

To help mitigate low response rates from the initial sample, the Government and the Deloitte team decided to draw an additional sample. This sampling approach was similar to the original, except that we increased the threshold sample size for each stratum and drew additional sample from each stratum according to the population frequency and the number previously sampled.

Survey Administration

DHA fielded the HRB Reserve Component Survey online, a first for the Reserve population. The team created unique survey links for each respondent that only the intended respondent could use and was distributed through an email invitation. Because of this functionality, respondents were able to save their progress and re-visit the survey if they were unable to complete it in one sitting.

The survey was fielded over five months from September 2014 to January 2015. The team distributed an email notification to alert respondents to the survey, followed by an invitation email, and then six reminder emails throughout the fielding period.

DATA PREPARATION

Data Cleaning

The survey team used data cleaning and checking procedures to ensure a high level of quality control for the survey results. In accordance with the Privacy Act, all identifiers such as name and address were removed to ensure that respondents cannot be identified. Our data cleaning protocol is as follows:

- 1. **Examine for out-of-range values.** Simple frequencies were performed on all survey items to determine if any out of range values exist.
- 2. Delete blank records. If 100% of the non-demographic items were missing or blank, the record was deleted.
- 3. **Review straight-liners.** Items existed throughout the survey that require responses both at the high end of the scale and low end of the scale to be answered consistently. If a respondent answered using the same response category for a certain percentage of questions in a given survey section, it was likely that the respondent was not reading the question and was simply answering the same way for all questions. Such records were flagged for further consideration.
- 4. **Delete test cases.** Any data gleaned from test cases were removed prior to analysis of actual respondent data.
- 5. **Combine numeric variables where applicable.** Several numeric variables (e.g., height and weight) were coded over two variables. These were combined into a single variable.
- 6. **Code the skip patterns.** Observations that missed the questions because of skip patterns were identified so that they were not coded as missing data.

Response Rate Calculation

The survey team calculated the response rate utilizing protocols from the 2011 HRB Active Duty Survey. Response rate reports were calculated by taking the number of completed surveys (defined as a respondent having started and submitted the survey) and dividing it by the size of the sample that was reached (number of emails sent minus the number of bouncebacks received). Response rates were prepared overall and by Component.

Usable responses were those that remained after:

- 1. the above data cleaning procedures were conducted
- 2. the response was determined to be complete, meaning the respondent had
 - a) started the survey,
 - b) completed two specific demographic questions, and
 - c) answered at least one question related to alcohol use (Q45 Q69)
- 3. reached the end of the survey (though possibly declining to answer some questions)
- 4. clicked the "submit" button to submit the survey.

The final response rate for the survey was 7.8% for the initial sample and 5.7% for the additional sample (see Section 2.3).

Non-Response Analysis and Weighting

A non-response analysis was conducted to detect any nonresponse bias. Both unit and item non-response were analyzed to confirm that the missingness in the data are missing at random. To determine the presence of unit non-response bias, comparisons of respondents to non-respondents across strata were conducted. To determine the presence of item non-response bias, key questions from each survey section were modeled as predictors against sociodemographic characteristics. The two analyses informed data weighting to account for item and unit nonresponse in the analyses.

A full weight was calculated using two weights: 1) a base weight was calculated to account for the disproportionate stratification approach and unequal selection probabilities from the Reservist population, and 2) a differential non-response weight.

DATA ANALYSIS AND REPORTING

Data Analysis

Data were analyzed according to the research objectives outlined in the 2014 HRB Survey Analysis plan using SAS Version 9.4. Most analysis in this report are descriptive statistics presented as two- or three-way crosstabulations. Chisquare tests of association were used to identify differences in the distributions of categorical variables; to provide more information on specific differences in estimates, pairwise comparison of estimates were conducted and Bonferroni adjustments were applied to p-values to minimize Type I error as a result of performing multiple comparisons. For some research objectives, logistic analysis was conducted.

Reporting

HRB survey results are reported using written and graphical formats. These reporting modes have been designed to make the HRB survey data as accessible as possible for stakeholders, both for understanding results and using in decision-making.

The written reports are content-focused, digestible reports designed to make survey findings accessible to leadership and other stakeholders. Six Component reports will provide an overview of results for each of the six Components. The six topical reports address the following topics:

- Physical Health and Healthy Lifestyle
- Alcohol Use
- Nicotine and Tobacco Use
- Substance Use

- Stress/Mental Health
- Deployment

Infographic reports accompany each written report to provide creative visual representations of the data.

KEY DEFINITIONS AND MEASURES

Below are definitions of measures used in the Total Reserve Component Executive Summary Report and the HRB survey questions used to calculate each measure.

Substance Use

Drinking Level Classifications

The coding for drinking level classifications is based on the definitions established in the 2010 NHIS. Drinking levels are based on self-reports of the average frequency of alcohol consumption during the past year and the number of drinks the respondent consumed on the days he or she used alcohol. To determine current drinking levels, the number of days the respondent drank is used to calculate the average number of drinks per week, as follows: [(# days per year)(# drinks per year)/365 days].

- An 'Abstainer' is defined as having less than 12 alcoholic drinks in their entire lifetime.
- A 'Former Drinker' is defined as having at least 12 drinks in their lifetime and reported 0 days of drinking in the past 12 months.
- A 'Current Drinker' is defined as having at least 12 drinks in their lifetime and reported 1 or more days of drinking in the past 12 months. Current drinkers are categorized into three levels of drinking intensity.
 - An 'Infrequent/Light Drinker' is defined as having less than 4 drinks per week in the past year.
 - A 'Moderate Drinker' is defined as having 4 to 14 drinks per week for males, and 4 to 7 drinks per week for females in the past year.
 - A 'Heavy Drinker' is defined as having more than 14 drinks per week for males, and more than 7 drinks per week for females in the past year.

The following questions were used to calculate the above classifications.

- **Q45**: Have you had at least 12 alcoholic drinks over your ENTIRE LIFE? Yes/no/decline to answer
- **Q47**: In the PAST 12 MONTHS (365 days), on how many different DAYS would you estimate that you drank any type of alcoholic beverage? Your best guess is fine. 0-365 days
- **Q48.** In the PAST 12 MONTHS, on those days that you drank alcoholic beverages, on the average, how many drinks did you have? Average number of DRINKS you drank per day when you did drink: [2 DIGITS; 0 50]
- **Q4**: Are you...? Male/female

For those who were missing data on Q45 and Q47, Q55 and Q56 were used to calculate frequency and quantity of alcohol consumption in the past year.

- **Q55**: How often do you typically have a drink containing alcohol? Never/less than once a month/once a month/two to three times a month/once a week/two to three times a week/four or more times a week
- **Q56**: How many drinks containing alcohol do you have on a TYPICAL DAY when you are drinking? I don't drink/1 or 2/3 or 4/5 or 6/7 to 9/10 or more

Binge Drinking

The coding for binge drinking is based on the definitions established by NSDUH. Binge drinking is defined as having five or more drinks for males and four or more drinks for females on the same occasion at least once in the past 30 days.

The following question were used to define a binge drinker:

• **Q59:** During the PAST 30 DAYS, what was the <u>largest number of drinks</u> of any form of alcohol you had on one occasion?

AUDIT (Alcohol Use Disorders Identification Test)

The AUDIT (Alcohol Use Disorders Identification Test) scale sum score will be calculated to determine the potential for alcohol dependence across military components. The scale uses 10 items, which are recoded based on the AUDIT scale scoring guide developed by the World Health Organization (WHO). Each of the questions has a set of responses to choose from, and each response has a score ranging from 0 to 4. The higher the score, the more risk is indicated. Total scores of 8 or more are recommended as indicators of hazardous and harmful alcohol use, as well as possible alcohol dependence. The response categories reported for this composite score are:

- Range 0-40
- Low Risk (AUDIT score < 8) Indicates a low risk of alcohol dependence.
- Hazardous Drinking (AUDIT score 8-15) Indicates a pattern of alcohol consumption that increases the risk of harmful consequences for the user or others.
- Harmful Drinking (AUDIT score 16-19) Refers to alcohol consumption that results in consequences to physical and mental health, and possibly social life.
- Possible Alcohol Dependence (AUDIT score of 20+) Is a cluster of behavioral, cognitive, and physiological phenomena that may develop after repeated alcohol use. This phenomena can include a strong desire to consume alcohol, impaired control over its use, persistent drinking despite harmful consequences, and increased alcohol tolerance.

In order to calculate this, the AUDIT categorical indicator was computed to classify the risk levels of drinking across the military. The categories and cut-scores corresponding to each category are based on scoring guidelines developed by the WHO.

In the HRB survey, the following questions were used to calculate the above classifications.

- **Q55**: How often do you typically have a drink containing alcohol? Never/less than once a month/once a month/two or three times a month/once a week/two to three times a week/four or more times a week
- **Q56**: How many drinks containing alcohol do you have on a TYPICAL DAY when you are drinking? I don't drink/1 or 2/3 or 4/5 or 6/7 to 9/10 or more
- **Q57:** Please indicate how often you do the following. Never/Less than monthly/monthly/weekly/daily or almost daily
 - A: How often do you have six or more drinks on one occasion?
 - **B**: How often during the past year have you found that you were not able to stop drinking once you had started?
 - **C**: How often during the past year have you failed to do what was normally expected of you because of drinking?
 - **D**: How often during the past year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
 - E: How often during the past year have you had a feeling of guilt or remorse after drinking?

- **F**: How often during the past year have you been unable to remember what happened the night before because you have been drinking?
- **Q58:** For each question below, have you EVER experienced the following because of drinking? No/Yes, but not in the past year/yes, during the past year
 - A: Have you or someone else been injured as a result of your drinking?
 - **B**: Has a relative or friend or a doctor or other health worker been concerned about your drinking or suggested you cut down?

Unhealthy Drinking

To summarize and describe Reservists with the highest risk of drinking behavior based on the classification systems used in the HRB survey, a measure was to identify individuals who were classified in at least one of the following excessive categories (based on their respective classifications described above):

- 1) being classified as a heavy drinker
- 2) being classified as a high-frequency binge drinker (defined as someone who engages in binge drinking at least once per week, on average)
- 3) being identified as a higher risk drinker according to AUDIT score (defined as an AUDIT score greater than or equal to 8). We have characterized these individuals as unhealthy drinkers to represent their increased risk for negative health and social consequences.

Work Related Productivity Loss in the Past 12 Months

The survey contains 11 items related to the frequency of alcohol-related work productivity loss in the past 12 months. Response options for Q52 and Q53 are on a 4-point scale, ranging from "0 times" to "3 or more times." Response options for Q54 are on a slightly different 4-point scale, ranging from "0 work days" to "3 or more work days." The response categories reported for this composite score are:

- Yes, 1 or more items at least once in the past 12 months/No
- Yes, 2 or more items at least once in the past 12 months/No

In order to calculate this, response options were first recoded into a dichotomous variable to represent whether alcoholrelated work productivity loss had occurred or had not occurred at least once in the past 12 months. We then summed and recoded the 11 items into a dichotomous variable for at least 1 event that occurred 1 or more times, and created another dichotomous variable for at least 2 different events that occurred 1 or more times in the past 12 months.

In the HRB survey, the following questions were used to calculate the above classifications.

- **Q52:** How many times in the PAST 12 MONTHS did each of the following happen to you? 3 or more times/2 times/1 time/0 times
 - **C**: I was arrested for a drinking incident not related to driving.
 - **F**: I got a lower score on my efficiency report or performance rating because of my drinking.
 - **G**: I hit my spouse/significant other after having too much to drink.
 - H: I got into a fight where I hit someone other than a member of my family when I was drinking.
- **Q53:** How many times in the PAST 12 MONTHS did each of the following happen to you? 3 or more times/2 times/1 time/0 times
 - I: I had an illness connected with my drinking that kept me from duty for a week or longer.
- **Q54:** On how many work days (including both civilian and military) in the PAST 12 MONTHS did the following things happen to you? 3 or more work days/2 work days/1 work day/0 work days

- A: I was hurt in an on-the-job accident because of my drinking.
- **B**: I was late for work or left work early because of drinking, a hangover, or an illness caused by drinking.
- **C**: I did not come to work at all because of a hangover, an illness, or a personal accident caused by drinking.
- **D**: I worked below my normal level of performance because of drinking, a hangover, or an illness caused by drinking.
- **E**: I was drunk while working.
- **F**: I was called in during off-duty hours and reported to work feeling drunk.

Serious Consequences Related to Alcohol Use in the Past 12 Months

There are 15 items in the survey related to the frequency of serious consequences associated with alcohol use in the past 12 months. Response options are on a 4-point scale, ranging from "0 times" to "3 or more times." The response categories reported for this composite score are:

- Yes, 1 or more items at least once in the past 12 months/No
- Yes, 2 or more items at least once in the past 12 months/No

In order to calculate this, we first recoded response options into a dichotomous variable to represent whether a serious consequence had occurred or had not occurred in the past 12 months. We then summed and recoded the 15 items into a dichotomous variable for at least 1 event that occurred 1 or more times, and created another dichotomous variable for at least 2 different events that occurred 1 or more times in the past 12 months.

The questions used in this calculation were:

- **Q52:** How many times in the PAST 12 MONTHS did each of the following happen to you? 3 or more times/2 times/1 time/0 times
 - A: I found it harder to handle my problems because of my drinking.
 - **B**: I received UCMJ punishment (e.g., Court Martial, Article 15, Captain's Mast, Office Hours, Letter of Reprimand, etc.) because of my drinking.
 - **D**: I had trouble on the job because of my drinking. 3 or more times/2 times/1 time/0 times
 - E: I didn't get promoted because of my drinking.
 - I: My spouse or live-in fiancé/boyfriend/girlfriend threatened to leave me or left me because of my drinking.
 - J: My spouse or live-in fiancé/boyfriend/girlfriend asked me to leave because of my drinking.
 - K: I did something sexually that I regretted.
 - L: I had trouble with the police (civilian or military) because of my drinking.
 - **M**: I spent time in jail, stockade, or brig because of my drinking.
- **Q53:** How many times in the PAST 12 MONTHS did each of the following happen to you? 3 or more times/2 times/1 time/0 times
 - **C**: I was arrested for driving under the influence of alcohol.
 - **F**: I was hurt in an accident because of my drinking (e.g., vehicle, work, other).
 - **G**: My drinking caused an accident where someone else was hurt or property was damaged.
 - H: I received detoxification treatment in a hospital or residential center because of my drinking.
 - J: I had to have emergency medical help because of my drinking.
 - **K**: I was hospitalized because of my drinking.

Risk Behaviors Related to Alcohol Use in the Past 12 Months

The survey contains 4 items related to the frequency of alcohol-related risk behaviors in the past 12 months. Response options are on a 4-point scale, ranging from "0 times" to "3 or more times." The response categories reported for this composite score are:

- Yes, 1 or more items at least once in the past 12 months/No
- Yes, 2 or more items at least once in the past 12 months/No

In order to calculate this, we first recoded response options into a dichotomous variable to represent whether a risk behavior had occurred or had not occurred in the past 12 months. We then summed and recoded the 4 items into a dichotomous variable for at least 1 event that occurred 1 or more times, and created another dichotomous variable for at least 2 different events that occurred 1 or more times in the past 12 months.

In the HRB survey, the following questions were used to calculate the above classifications.

- **Q53:** How many times in the PAST 12 MONTHS did each of the following happen to you? 3 or more times/2 times/1 time/0 times
 - A: I operated power tools or machinery when I had too much to drink.
 - **B**: I drove a car or other vehicle when I had too much to drink.
 - **D**: I rode in a car or other vehicle driven by someone who had too much to drink.
 - **E**: I drove or rode in a boat, canoe, or other watercraft when I had too much to drink.

Cigarette Smoking Classification Levels

The coding for cigarette smoking classification levels is based on the definitions established in the 2010 NHIS. The response categories reported for this composite score are:

- An 'Abstainer' is defined as smoking less than 100 cigarettes in their lifetime.
- A 'Former' smoker is defined as smoking at least 100 cigarettes in their lifetime, but does not currently smoke cigarettes now.
- A current smoker is defined by the criteria described above for "current cigarette smoker," and then split into three categories of smoking intensity.
 - An 'Infrequent' smoker reports smoking cigarettes "Some days."
 - A 'Light/Moderate' smoker reports smoking cigarettes "Every day" and on average, currently smokes less than 20 cigarettes (less than one pack) per day.
 - A 'Heavy' smoker reports smoking "Every day" and currently smokes 20 or more cigarettes per day (1 pack or more) on average.

In the HRB survey, the following questions are used to calculate the above classifications.

- **Q70:** Have you smoked at least 100 cigarettes in your entire life? No/Yes
- Q73: Do you NOW smoke cigarettes every day, some days or not at all? Every day/Some days/Not at all
- **Q75:** On the average, how many cigarettes do you now smoke a day? 0-99

Smokeless Tobacco Classification Levels

The coding for smokeless tobacco classification levels will use two items. The response categories reported for this composite score are:

• An 'Abstainer' is defined as no lifetime use of chewing tobacco, snuff, or any other form of smokeless tobacco.

- A 'Former' smokeless tobacco user reports use of smokeless tobacco products in their lifetime, but has not use in the past 12 months.
- An 'Infrequent' user reports use of smokeless tobacco products "about once a month" or less in the past year. Respondents classified as using smokeless tobacco
- 'Some days' report using more than once a month, but not on a daily basis in the past year.
- 'Every day' reports smokeless tobacco use on a daily basis in the past 12 months.

In the HRB survey, the following questions are used to calculate the above classifications.

- **Q81:** Have you EVER used chewing tobacco, snuff, or any other form of smokeless tobacco? No/Yes
- Q82: During the PAST 12 MONTHS, how often on the average have you used chewing tobacco, snuff, or other smokeless tobacco? About every day/5 6 days a week/3 4 days a week/1 2 days a week/2 3 days a month/About once a month/Less than once a month/I have not used chewing tobacco, snuff, or other smokeless tobacco in the past 12 months

Current Smokeless Tobacco Classification

The coding for current smokeless tobacco classification levels will use two items. A "Current" smokeless tobacco user reports use of smokeless tobacco products in their lifetime and using about once a month or more within the past year. The response categories reported for this composite score are:

- Yes, current smokeless tobacco user
- No

The following questions were used to calculate the above classifications.

- Q81: Have you EVER used chewing tobacco, snuff, or any other form of smokeless tobacco? No/Yes
- Q82: During the PAST 12 MONTHS, how often on the average have you used chewing tobacco, snuff, or other smokeless tobacco? About every day/5 - 6 days a week/3 - 4 days a week/1 - 2 days a week/2 - 3 days a month/About once a month/Less than once a month/I have not used chewing tobacco, snuff, or other smokeless tobacco in the past 12 months

Smokeless Tobacco Use in the Past 30 Days

The coding for smokeless tobacco use in the past 30 days will use two items. This measure is used to compare Total Reserve Component prevalence to the Healthy People 2020 objectives. The response categories reported for this composite score are:

- Yes, used within the past 30 days
- No

The following questions were used to calculate the above classifications.

- Q81: Have you EVER used chewing tobacco, snuff, or any other form of smokeless tobacco? No/Yes
- Q84: When was the last time you used chewing tobacco, snuff, or other smokeless tobacco? Today/During the past 30 days/More than 1 month ago but within the past 6 months/More than 6 months ago but within the past year/More than 1 year ago but within the past 2 years/More than 2 years ago

Cigar and Pipe Use in the Past 12 Months

There are two items in the survey to determine frequency of cigar and pipe use in the past 12 months. There is a 6-point scale to determine the frequency of use, ranging from "Less than once a month" to "About every day." There are also response

options to indicate "Not in the past 12 months" and "I never smoked." We will combine the top four response choices ("About every day," "5-6 days a week," "3-4 days a week," "1-2 days a week") to indicate use "1 or more days per week." We combined the remaining two response choices ("About once a month" and "Less than once a month") to reflect use "Less than once per week" in the past year. The combination of the two use categories represents "Any cigar/pipe use" in the past 12 months. We combined those who did not smoke in the past year or who never smoked in their lifetime to represent "Did not smoke." The response categories reported for this composite score are:

- Did not smoke
- Less than once/week
- 1 or more days/week
- Any cigar/pipe use

In the HRB survey, the following questions are used to calculate the above classifications.

- Q87: During the PAST 12 MONTHS, how often have you smoked the following? About every day/5-6 days a week/3-4 days a week/1-2 days a week/About once a month/Less than once a month/Not in the past 12 months/I never smoked
 - o A: Cigars
 - **B:** Pipes (including a hookah pipe)

Any Nicotine Use in the Past 12 Months

We created a nicotine use indicator by combining participants' responses to their cigarette, smokeless tobacco, cigar, and pipe smoking use in the past 12 months. Those who indicate they have smoked cigarettes, used chewing tobacco, snuff, or other smokeless tobacco, including new forms of smokeless tobacco, smoked cigars, smoked pipes in the past 12 months, or any other type of nicotine delivery system will be classified as using "any nicotine" in the past year. The response categories reported for this composite score are:

- Yes, nicotine use in past 12 months
- No

In the HRB survey, the following questions are used to calculate the above classifications.

- **Q70:** Have you smoked at least 100 cigarettes in your entire life? Note: Smoking at least 100 cigarettes would be equal to 5 or more packs in your entire life. No/Yes
- **Q72:** When was the last time you smoked a cigarette? Today/During the past 30 days/1 3 months ago/4 6 months ago/7 12 months ago/1 3 years ago/More than 3 years ago
- **Q81:** Have you EVER used chewing tobacco, snuff, or any other form of smokeless tobacco? No/Yes
- **Q84:** When was the last time you used chewing tobacco, snuff, or other smokeless tobacco? Today/During the past 30 days/More than 1 month ago but within the past 6 months/More than 6 months ago but within the past year/More than 1 year ago but within the past 2 years/More than 2 years ago
- **Q87:** During the PAST 12 MONTHS, how often have you smoked the following? About every day/5-6 days a week/3-4 days a week/1-2 days a week/About once a month/Less than once a month/Not in the past 12 months/I never smoked
 - o A: Cigars
 - **B:** Pipes (including a hookah pipe)
- **Q88:** When was the last time you used any of the following smokeless tobacco products? In the past 12 months/more than 12 months ago/never

- A: Electronic or smoking nicotine delivery products (e.g., E-pipe, E-cigar, E-cigarette, smokeless cigarettes, etc.)
- o B: Nicotine dissolvables (e.g., orbs, dissolvable sticks, dissolvable strips, etc.)
- C: Caffeinated smokeless tobacco (e.g., caffeinated snuff or dip)
- o **D:** Nicotine gel

Physical Health and Healthy Lifestyle

Body Mass Index (BMI)

BMI is a measure of body mass to detect possible weight problems in male and female adults. Respondents are asked two open-ended questions about their weight and height to calculate BMI. The calculation is: (weight in pounds/height in inches²) * 703. The response categories reported for this composite score are:

- Underweight
- Healthy weight
- Overweight
- Obese

The criteria to fit into the above categories depend on gender and age. Particularly for individuals under 20 years old, there are different criteria due to the changes in the amount of body fat.

Table A-1. Body Mass Index (BMI) Categories

	Underweight	Healthy Weight	Overweight	Obese
Males/females age 20 or older	BMI<18.5	18.5≤BMI<25.0	25.0≤BMI<30.0	BMI≥30.0
18 year old males	BMI<18.24	≤BMI<25.66	≤BMI<28.96	BMI≥28.96
18 year old females	BMI<17.55	≤BMI<25.68	≤BMI<30.33	BMI≥30.33
19 year old males	BMI<18.73	≤BMI<26.36	≤BMI<29.73	BMI≥29.73
19 year old females	BMI<17.77	≤BMI<26.10	≤BMI<31.03	BMI≥31.03

The following questions are used to calculate the above classifications.

- Q4: Are you...? Male/female
- **Q15:** How old are you? Years [open-end numeric]
- **Q16:** About how tall are you without shoes on? Feet [open-end numeric]; Inches [open-end numeric]
- **Q17:** How much do you weigh without shoes on? (If you are currently pregnant, what was your typical weight before pregnancy?) Pounds [open-end numeric]

Physical Activity

National physical activity guidelines recommend 150 minutes of moderate physical activity or 75 minutes of vigorous physical activity per week, or a mixture of both. This is considered enough physical activity to gain considerable health benefits. Additional and more extensive benefits can be achieved through higher levels of physical activity. To achieve these benefits, adults should engage in 300 minutes of moderate intensity or 150 minutes of vigorous intensity, or an equivalent combination of both (Health.gov Physical Activity Guidelines, 2008).

- Physical Activity: Respondents are asked how often and for how long they engage in three types of physical activity.
 - Moderate activity raises heart rate and breathing but individuals should be able to comfortably have a conversation;

- Vigorous physical activity is exertion high enough that individuals would find it difficult to have a conversation;
- Strength training involves using weights or resistance training to increase muscle strength.

Various measures of physical activity are included in Healthy People 2020 objectives. For example, there are objectives about increasing the proportion of adults who engage in aerobic physical activity of either moderate intensity or vigorous intensity for a certain amount of time per week. Another objective is to increase the proportion of adults who engage in both anaerobic physical activity and muscle-strengthening activities.

The following question is used to calculate the proportion of HRB respondents who meet these criteria:

- Q26: During the PAST 30 DAYS, how often did you do the following kinds of physical activity?
 - **Moderate Physical Activity** exertion that raises heart rate and breathing, but you should be able to carry on a conversation comfortably during the activity
 - **Vigorous Physical Activity** exertion that is high enough that you would find it difficult to carry on a conversation during the activity
 - o Strength Training including using weights or resistance training to increase muscle strength
- Q27: During the PAST 30 DAYS, on the days you did the following, how long PER DAY did you typically do each? Please select ONE response per row.
 - **Moderate Physical Activity** exertion that raises heart rate and breathing, but you should be able to carry on a conversation comfortably during the activity
 - **Vigorous Physical Activity** exertion that is high enough that you would find it difficult to carry on a conversation during the activity
 - Strength Training including using weights or resistance training to increase muscle strength

Optimum Sleep Levels

Healthy People 2020 has a target to increase the proportion of Americans who get sufficient sleep (defined as 8 or more hours for those aged 18 to 21 years and 7 or more hours for those aged 22 years and older, on average, during a 24-hour period).

The following question is used to calculate the proportion of HRB respondents who meet these criteria:

• Q151: In the PAST WEEK (past 7 days), about how many hours on average did you sleep each 24 hour period?

Fruit and Vegetable Consumption

National nutritional guidelines encourage the consumption of fruits, vegetables, whole grains, dairy, and lean protein to improve overall health (Dietary Guidelines, 2010). The Department of Agriculture advises specifically on the recommended amounts of each food group based on age, gender, weight, and physical activity (USDA, 2015). According to choosemyplate.gov, for a 2000-calorie diet for those aged 18 or more, the following amounts are recommended: 2.5 cups of vegetables (2:1 non-starchy and starchy vegetables), 2 cups of fruit, 3 cups of dairy, 5.5 ounces of protein, and 3 ounces of whole grains. As shown in Figure 7, this translates approximately to the following serving amounts: 2 servings of non-starchy vegetables, 1 serving of starchy vegetables, 2 servings of fruit, 3 servings of dairy, 2 servings of protein, and 2 servings of whole grains. The HRB survey asks Reserve personnel the number of times a day in a typical week that they consume food groups. We assume that a 'time' translates into a 'serving' but in future iterations of the survey, recommend that the question be changed to align more closely to guidelines.

- Q34: In a TYPICAL WEEK, how often do you eat or drink the following foods?
 - A: FRUIT: fresh, frozen, canned, or dried
 - **B:** STARCHY VEGETABLES: white potatoes, corn, peas
 - **C:** VEGETABLES: fresh, frozen, canned, cooked or raw (not fried)

Stress and Mental Health

High Overall Stress Level in the Past 12 Months

The survey contains two items to measure level of overall stress in the past 12 months. In the first question participants indicate how often they experienced a lot of stress in the past 12 months. Responses are provided on a 5-point scale, ranging from "Never" to "Always." In the second question participants indicate how much military-related stress they experienced overall in the past 12 months. Average scores are calculated for each item separately; these scores are then averaged together. Those participants with an average score of 0.70 or greater were classified and presented in the tables as "High overall stress," whereas those with an average score of less than 0.70 were classified as "Low overall stress." Overall stress level was then dichotomized based on a cutoff value. The response categories reported for this composite score are:

- High overall stress level
- Low overall stress level

The following questions are used to calculate the above classifications.

- Q127: In the PAST 12 MONTHS, how often did you feel a lot of stress? Always/often/sometimes/seldom/never
- **Q128:** In the PAST 12 MONTHS, how much military-related stress have you experienced overall? A lot/some/a little/none at all

High Depression Level in the Past Week

There are two items in the survey to assess level of depressive symptoms in the past week. Response options are provided on a 5-point scale, ranging from "Never" to "5-7 days." To create a depression level scale, the responses were recoded (i.e., "5-7 days" was assigned a value of 1, "3-4 days" was assigned a value of .75, "1-2 days" was assigned a value of .5, "Less than 1 day" was assigned a value of .25, and "never" was assigned a value 0) and averaged. Depression level was then dichotomized based on a cutoff value. We classified and presented those with an average score of 0.75 or greater presented in the tables as "High depression," whereas those with an average score of less than 0.75 but greater than 0 were classified as "Low depression." The response categories reported for this composite score are:

- High depression level
- Low depression level

The following questions are used to calculate the above classifications.

- **Q133:** On how many days in the PAST WEEK did you feel the following for <u>most</u> of the day? Please select ONE response per row. 5 7 days/3 4 days/1 2 days/less than 1 day/never
 - o C: I felt depressed
 - o E: I felt sad

High Anxiety Level in the Past 30 Days

The survey contains 4 items to assess how often they experienced symptoms of anxiety associated with stress in the past 30 days. Responses are provided on a 4-point scale, ranging from "Not at all" to "More than half the days." To create an anxiety level scale, we recoded and then averaged the responses on the 4 items (i.e. "More than half the days" is assigned a value of 1, "Several days" is assigned a value of .667, "One or two days" is assigned a value of .333, and "Not at all" is assigned a value of 0). We then dichotomized anxiety level based on a cutoff value. Those participants with an average score of 0.75 or greater are classified and presented in the tables as "High anxiety," whereas those with an average score of less than 0.75 but greater than 0 are classified as "Low anxiety." The response categories reported for this composite score are:

- High anxiety level
- Low anxiety level

The following questions are used to calculate the above classifications.

- **Q134**: During the PAST 30 DAYS, how often have you been bothered by the following? More than half the days/several days/one or two days/not at all
 - A: Feeling nervous, anxious, on edge, or worrying a lot about different things
 - **B:** Getting tired very easily
 - C: Trouble falling asleep or staying asleep
 - **D:** Becoming easily annoyed or irritable

Suicide Attempts

The survey contains two items related to suicide attempts to determine whether and when it had occurred. If respondents answered that they had attempted suicide, there is a follow-up item about when the attempt had occurred. The response categories reported for this composite score are:

- Past year
- Not within past year but since joining service
- Not within past year but before joining service

The following questions are used to calculate the above classifications.

- Q147: Have you ever attempted suicide? No/Yes/Decline to answer
- **Q148:** If you have ever attempted suicide, did you attempt it during any of the following periods? Please select ONE response per row. No/Yes
 - o A: Within the past year
 - **B:** Since joining the military
 - **C:** Before joining the military
 - o **D:** Within 6 months before leaving for deployment/mission
 - E: During a deployment/mission
 - **F:** Within 6 months after returning from a deployment/mission

Deployment

High Posttraumatic Stress (PTS) Level, Past 30 Days

There are 4 items in the survey to determine the extent to which they experienced symptoms in the past 30 days that indicated need for further PTS evaluation. Participants indicate how much they have been bothered by each of the 4 symptoms in the past month. Responses are provided on a 5-point scale, ranging from "Not at all" to "Extremely." To create this scale, we will calculate an average from participants' responses on each of the 4 items. We will then use a dichotomous cut off to determine 'High PTS level'. Respondents with scores below 4 are categorized as "Low PTS," and those with scores of 4 and above are categorized and presented in the tables as "High PTS." The response categories reported for this composite score are:

- High PTS level
- Low PTS level

The following questions are used to calculate the above classifications.

• **Q136:** How much have you been bothered by each of the following in the PAST 30 DAYS? Please select ONE response per row. Extremely/quite a bit/moderately/a little bit/not at all

- **B:** Feeling very upset when something reminded you of a stressful experience
- D: Feeling emotionally numb or being unable to have loving feelings for those close to you
- E: Having difficulty concentrating
- **F:** Feeling jumpy or easily startled

Possible Traumatic Brain Injury (TBI)

To assess whether there is a need for further evaluation of mild TBI, respondents will be asked three series of items based on the Brief Traumatic Brain Injury Screen (BTBIS; Schwab et al., 2006).

The first series of items (Q161A – Q161F) asks about six events experienced during most recent deployment (combat or non-combat) including:

- Blast or explosion (IED, RPG, land mine, grenade, etc.);
- Vehicular accident/crash (any vehicle, including aircraft);
- Fragment wound above the shoulders;
- Bullet wound above the shoulders;
- A fall serious enough to need medical attention; and
- Another type of injury.

A response of "Yes" to at least one item verifies occurrence of an injury.

The second series of items (Q165A – Q165H) asks about eight symptoms experienced during or after most recent deployment, including:

- Memory problems or lapses;
- Balance problems;
- Dizziness;
- Ringing in the ears;
- Sensitivity to bright light;
- Irritability;
- Headaches; and
- Nightmares.

A response of "Yes" to at least one item verifies the presence of TBI-related symptoms.

The final series of items (question Q167A – question Q167G) will ask whether an injury received during most recent deployment resulted in any of the following seven outcomes:

- Lost consciousness or got "knocked out" for less than a minute;
- Lost consciousness or got "knocked out" for 1 to 20 minutes;
- Lost consciousness or got "knocked out" for more than 20 minutes;
- Felt dazed, confused, or "saw stars";
- Didn't remember the event;
- Concussion or symptoms of a concussion (such as headache, dizziness, irritability, etc.); and
- Head injury.

If the respondent answered "Yes" to at least one of the injury outcome items, in addition to verification of at least one injury related event and one symptom based on the first two sets of items, further evaluation is recommended for possible TBI.

Responses:

- Possible TBI
- Unlikely TBI

Combat Exposure

There 17 items to assess level of combat exposure across all combat zone deployments since September 11, 2011. The items ask participants to indicate the number of times they had experienced combat-related events, such as "I personally fired my weapon at the enemy," "My unit suffered causalities," and "I was wounded in combat." Response options were provided on a 5-point scale, ranging from "Never" to "More than 50 times."

From these items, we will create a composite score using each individual item (A through Q), where a response of "More than 50 times" will be assigned a value of 4, "13 to 50 times" will be assigned a value of 3, "4 to 12 times" will be assigned a value of 2, "1 to 3 times" will be assigned a value of 1, and "Never" will be assigned a value of 0. This sum score will be trichotomized, with "10 and above=High Exposure," "1 to 9=Moderate Exposure," and "0=Low Exposure." Those who had not been deployed since September 11, 2001 according to Q148 or Q159 will be categorized as "No combat deployments." The response categories for this outcome are:

- High (10 times or more)
- Moderate
- Low
- No Combat Deployments

The following questions are used to define the above classifications:

- Q158: Have you been deployed on either a combat or non-combat mission/deployment since September 11, 2001?
- **Q159:** The term "combat zone deployment," as used in this questionnaire, refers to a deployment where you received imminent danger pay (IDP), hazardous duty pay, and/or combat zone tax exclusion benefits. How many COMBAT deployments (including OIF, OEF, OND missions where you received IDP, hazardous duty pay, and/or combat zone tax exclusion benefits) have you been on since <u>September 11, 2001</u>?
- Q173A: I was sent outside the wire on combat patrols, convoys, or sorties
- **Q173B:** I, or members of my unit, received incoming fire from small arms, artillery, rockets, or mortars.
- Q173C: I, or members of my unit, encountered mines, booby traps, or IEDs (improvised explosive devices).
- Q173D: I worked with landmines or other unexploded ordnances.
- **Q173E:** My unit fired on the enemy.
- Q173F: I personally fired my weapon at the enemy.
- **Q173G:** I engaged in hand-to-hand combat.
- **Q173H:** I was responsible for the death or serious injury of an enemy.
- **Q173I:** I witnessed members of my unit or an ally unit being seriously wounded or killed.
- Q173J: My unit suffered causalities.
- Q173K: I saw dead bodies or human remains
- Q173L: I handled, uncovered, or removed dead bodies or human remains.
- Q173M: Someone I knew well was killed in combat
- **Q1730:** I interacted with enemy prisoners of war.
- Q173P: I witnessed or engaged in acts of cruelty, excessive force, or acts violating rules of engagement.
- **Q173Q:** I was wounded in combat.