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2006 Unit Level Influences on Alcohol and Tobacco Use

A Component of the Defense Lifestyle Assessment Program (DLAP)



September 2007

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The views, opinions, and findings contained in this documentation are those of the authors and should not be construed as an official Department of Defense position, policy, or decision, unless so designated by other official documentation.

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Preface and Acknowledgments

For more than 20 years, the Department of Defense (DoD) has collected information regarding behavioral and health readiness of active duty military personnel through the Survey of Health Related Behaviors Among Military Personnel. In 2005, DoD initiated the *Department of Defense Lifestyle Assessment Program (DLAP)*, which incorporates the active-duty health behaviors study and expands the scope to include the National Guard and Reserves, as well as other special studies the first of which is described in this report. Findings from the program provide information on the fitness of the force, including estimates of alcohol, drug, and tobacco use; nutrition and physical activity; and critical assessments of emotional stress and other issues. Data will be used to assess and document potential health and lifestyle issues pertaining to personnel, to track health-related trends, and to identify high-risk groups and areas needing additional screening or intervention. Results will help leaders better understand the nature, causes, and consequences of substance abuse and health practices in the military and to evaluate and guide programs and policy.

The 2006 DoD Survey of Unit Level Influences on Alcohol and Tobacco Use was conducted by RTI International (RTI) under the sponsorship of the Office of the Assistant Secretary of Defense (Health Affairs) and the TRICARE Management Activity (Health Program Analysis and Evaluation Directorate). The Unit Level survey is the first in-depth study to be conducted among active-duty military personnel that examines unit- and installation-level factors that affect alcohol and tobacco use. Findings from the study have significance for understanding a wide range of health-related behaviors among military personnel. They will also help identify both the common needs of the Active Force, distinct needs of each Service, and needs of certain Unit types.

Many individuals contributed to the success of this study. Among DoD and military Services personnel, special appreciation is due to Ms. Kim Frazier,— Lieutenant Colonel Lorraine Babeu, Dr. Michael

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Under subcontract to RTI, Pearson Assessments printed, shipped, and received the questionnaires. It also performed the optical scanning of the questionnaires and provided a data file for the analysis.

Many RTI staff members in addition to the report authors contributed significantly to the success of this project by composing the questionnaire, constructing the sampling frames for the Services, coordinating data collection activities, tabulating data, completing various data processing tasks, and editing and formatting the report. In particular, Dr. Barbara Flannery coordinated questionnaire development, and Mr. Russ Vandermaas-Peeler led the data collection task and day-to-day activities with the field sites. Ms. Kristine L. Rae Olmsted had major responsibility for the analyses and oversaw all data management activities. Mr. Scott Ginder produced the data estimates. Dr. Lei Li led the sampling and weighting tasks. Many thanks are due to Ms. Sara Lawrence Calvin for her expertise in project management. Members of the RTI field teams are commended for accomplishing their data collection tasks under rigorous travel and scheduling demands. Finally, thanks are due to Ms. Melissa Fisch Wilson, Ms. Sharon

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Janice M. Brown, Ph.D.
Project Director

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Executive Summary

This report presents findings from the 2006 Department of Defense (DoD) Survey of Unit Level Influences on Alcohol and Tobacco Use Among Military Personnel. This study was conducted under the direction of the Office of the Assistant Secretary of Defense (Health Affairs) and is the first to provide in-depth information regarding installation, unit, and individual influences on alcohol and tobacco use. It was an effort to understand the reasons for recent increases in heavy alcohol use and tobacco use observed in the active-duty health behavior surveys (Bray & Hourani, 2007; Bray et al., 2003, 2006).

The target population for this study consisted of all active-duty military personnel stationed at 24 participating installations, six from each active Service. The final sample consisted of 15,221 active-duty military personnel (3,502 Army, 3,297 Navy, 5,068 Marine Corps, and 3,354 Air Force). Participants were drawn from 204 units that were randomly selected from the 24 installations to take part in the study. About half of the units from each Service were located at installations in the continental United States (CONUS) and the other half of the units were at installations outside the continental United States (OCONUS). Participants completed self-administered questionnaires anonymously in group sessions at the participating installations. The overall response rate was 74.7%.

The data were weighted to represent personnel at each participating installation, but these installations were not designed to represent the full active force. Instead, they were selected by the Services because they had known relatively high rates of alcohol use or tobacco use to permit a better understanding of the factors that contribute to that use. Thus, the prevalence estimates provided in this report represent the population of personnel at these participating installations, not the entire active-duty population. Consequently, many estimates in this report differ from those in the 2005 DoD Survey of Health Related Behaviors Among Military Personnel (Bray et al., 2006).

Selected key findings from the 2006 Unit Level Influences survey are noted below. *In interpreting and understanding the findings, three points should be considered: (1) The data and results are self-reported findings that may differ from information in official records or other objective data sources. (2) Some questionnaire items comprise screening instruments suggestive of possible substance abuse problems; results from these screeners may suggest the need for further evaluation but do not represent a formal clinical diagnosis. (3) In reporting the findings, the term “significant” is often used. This term refers to statistical significance resulting from statistical tests of differences that were conducted.*

Installation-Level Influences

Installation-level influences were highlighted by examining regional differences reflected between CONUS and OCONUS installations.

Alcohol Use

Findings from the 2005 DoD Survey of Health Related Behaviors Among Active Duty Personnel indicated a continuing pattern of increases in alcohol consumption and heavy drinking rates. The present survey, although administered to a select set of installations, revealed a similar pattern of use among military personnel.

- More than 75% of all personnel acknowledged past-month alcohol use.
- Prevalence rates for past-month alcohol use were generally higher at OCONUS compared with CONUS locations.
- Unadjusted rates were lowest among Army and Air Force personnel and highest among Marine Corps personnel.
- Navy personnel showed significantly lower OCONUS daily alcohol consumption compared with CONUS bases.
- CONUS versus OCONUS comparisons revealed a significantly larger number of drinks being consumed by Army and Air Force personnel.

- Nearly 60% of Marine Corps personnel reported feeling drunk two or more times in the past month.
- For all Services, rates for drinking at hazardous levels or above were higher for OCONUS versus CONUS bases. Air Force personnel reported the lowest prevalence rate of hazardous and harmful drinking levels, as well as possible dependence.
- The survey measured negative effects of alcohol use in terms of serious consequences, productivity loss, and having experienced administrative action. Marine Corps personnel showed the highest rates for all types of negative effects and Air Force personnel showed the lowest.
- OCONUS Army personnel acknowledged a higher rate of experiencing three or more serious consequences than did CONUS Army personnel.
- The findings for Navy personnel were reversed, with a larger percentage of CONUS personnel experiencing three or more serious consequences compared with OCONUS personnel.
- Surveys of military and civilian populations have established certain patterns among sociodemographic groups that are useful in targeting prevention and treatment efforts. Problem drinking rates and negative effects were greater among the following groups: males compared with females, those with a high school education or less, personnel at OCONUS versus CONUS locations, persons who were single or married without a spouse present, and those in pay grades E1 to E3.
- Binge drinking rates were highest among OCONUS, single, Marine Corps personnel.

Sociodemographic characteristics revealed the following findings with respect to alcohol use and heavy drinking.

- Overall, alcohol consumption was highest among CONUS and OCONUS Marine Corps personnel.
- Personnel having a high school education or less showed the heaviest consumption patterns across all Services.
- For all branches except the Navy, the trend was for heavier consumption at OCONUS bases.
- Heavy drinking rates were significantly higher among OCONUS males in the Army and Air Force compared with CONUS males in those Service branches.

Tobacco Use

Tobacco use is common among active-duty military personnel despite its known negative consequences for health and readiness. The participating installations in this study provided insights into the role of installation-level influences on tobacco use.

- Rates of tobacco use in the past 30 days were relatively high among participating installations: 39.2% for any cigarette use, 35.1% for daily cigarette use, 16.6% for smokeless tobacco use, and 30.8% for cigar use.
- Rates of any cigarette use and daily cigarette use were higher for CONUS (40.5% and 36.5%, respectively) than for OCONUS (36.1% and 32.0%, respectively) participating installations. There were no overall CONUS–OCONUS differences for smokeless tobacco use or cigar use.
- There were a number of CONUS–OCONUS differences within demographic groups for the different types of tobacco use: CONUS males; persons of white, non-Hispanic or other race/ethnicity; personnel with a high school education or less; personnel in pay grades E4 through E6; and personnel married with a spouse present were more likely than their OCONUS counterparts to engage in any cigarette use.
- Social and environmental influences indicated that 24.2% had attempted to stop smoking cigarettes in the last 6 months, about one-fifth of personnel (20.4%) had begun smoking since joining the military, and less than one-tenth of smokers (8.7%) had quit successfully since joining.
- Few personnel reported that they had switched to smokeless tobacco because of restrictions on cigarette use (6.4%). However, 13.9% noted that they used smokeless tobacco because they could do so indoors.
- Overall results for attempts to stop smoking cigarettes show CONUS–OCONUS differences for the following demographic groups: males; white, non-Hispanics; those married with a spouse present; and pay grades E4 through E6. For all of these groups, personnel in CONUS were significantly more likely to have attempted to quit smoking than their OCONUS counterparts.
- Personnel most likely to succeed in their efforts to quit cigarette smoking for all Services were males, those with a high school education or less, those

married with a spouse present, and those in pay grades E4 through E6. For all of these groups, OCONUS personnel were more likely to succeed than CONUS personnel.

Culture of Alcohol and Tobacco Use

- In all Services, respondents living in the barracks/dormitories at OCONUS bases were more likely to have access to alcohol products, with 66.9% of those living at OCONUS bases reporting that they were permitted to have beer or some type of alcohol in their barracks compared with 61.3% of those living at CONUS bases.
- Nearly 35% of those living in barracks on OCONUS bases reported no limit on alcohol permitted in their barracks, a factor which may bolster underlying assumptions that alcohol use is more acceptable when living on OCONUS bases. This is further reinforced by somewhat lower rates of inspection for those living on OCONUS bases (24.8%) versus CONUS bases (28.3%).
- Alcohol policy was less likely to be enforced in the barracks at OCONUS installations (30.5% reported that alcohol policy was not enforced in the barracks) than at CONUS installations (22.6% reported that alcohol policies were not enforced in the barracks).
- Only a small percentage of respondents endorsed the statement that they limit their use of alcohol because of fear of military consequences. Navy respondents were more apt to report this as a limiting factor to alcohol consumption.
- A very small percentage (5.7%) of respondents limited their drinking because of command influences.
- It is encouraging to note that only 35.7% of respondents reported that they endorsed the statement “drinking is part of being in the military”; significant differences were not reported by region.
- A small but significant percentage of OCONUS respondents agreed with statements that they drink to fit in (19.0%), because it is part of life at this installation (27.6%), it is the only recreation available (17.6%), and they are encouraged to drink (25.1%).
- Alcohol consumption appears to be more of an expected behavior on OCONUS bases. Military leadership at these installations may hold an underlying set of assumptions that drinking is part of the culture of being in the military overseas.

- Respondents, especially those living on OCONUS bases, were more likely to do their drinking in on-base housing.
- Significantly more OCONUS respondents reported on-base drinking in barracks (17.8%), at enlisted clubs (8.8%), or at other on-base clubs (6.2%).
- Personnel living on CONUS bases were more apt to drink in off-base housing (33.4%) compared with those living in OCONUS bases (20.5%). This may partially reflect the fact that those living OCONUS are less likely to live off base.
- OCONUS personnel were significantly more likely to drink in off-base bars (33.1%) compared with CONUS personnel (23.9%).
- Personnel who smoke endorsed the statement that most of their friends in the military use tobacco products (61.5%). This statement was endorsed by significantly more CONUS smokers (62.7%) than those living on OCONUS bases (58.5%).
- Among all Services, 57.3% of respondents indicated that the availability of tobacco products makes it easy to smoke.
- Only 26.7% of respondents reported that smoking is a part of being in the military, and the majority (27.7%) lived on CONUS bases.

Unit-Level Influences

Unit-level influences were assessed by contrasting alcohol and tobacco use among persons in combat units, combat support units, and combat service support units.

Alcohol Use

- The highest rates of alcohol use were reported by combat units, with 80.4% reporting alcohol use in the past 30 days.
- Marine Corps combat units reported the highest alcohol use and Army combat units reported the lowest alcohol use.
- The highest average number of drinking days was reported for combat units, the least for combat support units.
- Among Army units, combat units had higher rates of alcohol use, heavy alcohol use, average daily ounces of ethanol, the largest number of drinks on one occasion, the largest number of drinks to feel intoxicated, and the highest prevalence of feeling drunk two or more times.

- Although Navy combat units were more likely to report higher rates of alcohol use and more days drinking, Navy combat support units reported the highest rates of heavy alcohol use, average daily ounces of ethanol, largest number of drinks, highest number of drinks to feel drunk, and highest rate of feeling drunk two or more times.
- In the Marine Corps units, combat units reported the highest indicators of use, with the exception of number of drinks to feel drunk.
- Air Force combat service support units had high rates of heavy use, days heavy drinking, average daily ounces, largest number of drinks, number of drinks to feel drunk, and reporting feeling drunk two or more times.
- Overall, combat units reported the highest levels of harmful drinking, possible dependence, and drinking at hazardous levels or above.
- Marine Corps combat unit respondents reported the highest levels of harmful drinking. More than 54.1% of Marine Corps units reported drinking at hazardous levels or above.
- Overall, combat support units reported higher rates of administrative action than combat service support units. However, combat units reported significantly more serious consequences than those in combat support units.
- Army combat and combat support units reported high rates of administrative action. Combat support units also were more likely to report productivity loss.
- Among Marine Corps units, combat support units reported significantly more administrative actions.
- Navy and Air Force combat units reported significantly less serious consequences for their drinking.

Tobacco Use

The following are key findings about the unit-level influences on tobacco use.

- Overall, personnel in combat units were more likely to use tobacco than personnel in combat support or combat service support units. These findings varied somewhat by Service.
- Rates of nicotine dependence were consistent with tobacco use patterns. Higher levels of dependence occurred for persons in combat units.
- Personnel whose supervisors used tobacco were significantly more likely to use one or more types of tobacco than personnel whose supervisors did not use tobacco.
- Personnel whose supervisors used tobacco were significantly more likely to believe that smoking is necessary to fit in with the unit, that smoking is part of being in the military, or to have started tobacco use since joining the military.

Workplace Climate

- Across DoD components when comparing combat and combat support units, combat units had significantly lower horizontal cohesion (mean scores 3.6 and 3.7, respectively) and higher job dissatisfaction (mean scores 2.9 and 2.7, respectively).
- When comparing combat and combat support units at a Service level, Air Force and Navy combat units reported significantly higher horizontal cohesion than combat support units (mean scores for Air Force 4.0 and 3.8, respectively; Navy, 3.7 and 3.6, respectively).
- Across DoD components when comparing combat and combat support units, combat units had significantly lower quality of work life (QOWL) (mean scores 3.6 and 3.7, respectively) and vertical cohesion (mean scores 3.8 and 4.0, respectively) than those from combat support units.
- When comparing combat, combat support, and combat service support units for Navy and Marine Corps, job dissatisfaction was higher among combat and combat support units than combat service support units (mean scores for Navy 2.8, 2.8, and 2.7, respectively; Marine Corps, 2.8, 2.8, and 2.7, respectively). The direction of unit-level differences was reversed for Air Force units—job dissatisfaction was significantly higher in combat service support units than combat units (mean scores 2.8 and 2.6, respectively).
- Across DoD components when comparing combat and combat support units, QOWL was significantly lower among combat units than combat support units (mean scores 3.6 and 3.7, respectively).
- Marine Corps combat units had significantly lower QOWL than combat service support units (mean scores 3.6 and 3.7, respectively).
- QOWL was significantly lower for Air Force combat support and combat service support units

than combat units (mean scores 3.8, 3.8, and 4.1, respectively).

- Across DoD components when comparing combat and combat support units, vertical cohesion was significantly lower among combat units than combat support units (mean scores 3.8 and 4.0, respectively).
- Among Air Force combat units, the direction of unit-level differences for vertical cohesion was reversed, with combat units reporting greater vertical cohesion than combat support and combat service support units (mean scores 4.3, 4.1, and 4.1, respectively).
- Across DoD components when comparing combat, combat support, and combat service support units, among nonproblem drinkers (Alcohol Use Disorders Identification Test [AUDIT] < 8), unit cohesion was significantly higher in combat support than in combat and combat service support units (mean scores 3.8, 3.6, and 3.6, respectively).
- Participants with high drinking scores (AUDIT \geq 8) reported significantly higher horizontal cohesion in combat support units when compared with combat service support units (mean scores 3.6 and 3.4, respectively).
- Across DoD components when comparing combat and combat support units, nonproblem drinking (AUDIT < 8) respondents reported higher job dissatisfaction for combat units compared with other combat support units (mean scores 2.8 and 2.7, respectively).
- Across DoD components when comparing combat, combat support, and combat service support units, high-drinking (AUDIT \geq 8) respondents reported higher job dissatisfaction for combat units when compared with other combat support and combat service support units (mean scores 3.0, 2.9, and 2.8, respectively).
- Across DoD components for nonproblem and problem drinkers, QOWL and vertical cohesion were both significantly higher for combat support units than combat units (QOWL AUDIT < 8, 3.8 and 3.7, respectively; AUDIT \geq 8, 3.6 and 3.4, respectively; vertical cohesion AUDIT < 8, 4.1 and 3.9, respectively; AUDIT \geq 8, 3.8 and 3.6, respectively).
- Air Force respondents with high drinking scores (AUDIT \geq 8) in combat units reported significantly higher horizontal cohesion than Air Force respondents in combat support or combat service support units (mean scores 4.1, 3.7, and 3.8, respectively).
- Soldiers with high drinking scores (AUDIT \geq 8) in combat units reported significantly higher job dissatisfaction than those in combat service support units (mean scores 3.0 and 2.9, respectively).
- Sailors that were nonproblem drinkers (AUDIT < 8) reported significantly lower QOWL in combat units than combat service support units (mean scores 3.7 and 3.9, respectively).
- Across DoD components, respondents that were combat deployed reported significantly lower horizontal cohesion than those that were not deployed (mean scores 3.6 and 3.7, respectively).
- Across DoD components, deployed personnel (combat deployed and noncombat deployed) reported significantly higher job dissatisfaction (mean scores 2.8, 2.9, and 2.7, respectively), lower QOWL (3.6, 3.6, and 3.7, respectively), and lower vertical cohesion (3.8, 3.8, and 4.0, respectively) than those that were not deployed.
- Soldiers that were noncombat deployed reported significantly higher job dissatisfaction than combat deployed and not deployed Soldiers (mean scores 3.0, 2.8, and 2.8, respectively).
- Deployed Sailors, Marines, and Air Force personnel (combat deployed and noncombat deployed) reported significantly higher job dissatisfaction than personnel that were not deployed (Navy, 2.8, 2.8., and 2.7, respectively; Marines, 2.8, 2.8, and 2.7, respectively; Air Force, 2.7, 2.8, and 2.6, respectively).
- Combat deployed Sailors reported significantly lower QOWL than their noncombat deployed and not deployed counterparts (mean scores 3.6, 3.7, and 3.8, respectively).
- Air Force personnel that were noncombat deployed reported significantly lower QOWL than not deployed personnel (mean scores 3.8 and 3.9, respectively).
- Across DoD components among problem drinkers (AUDIT \geq 8), aspects of unit cohesion were more negative (i.e., horizontal cohesion and vertical cohesion were lower) for combat deployed than noncombat or not deployed personnel (mean scores for horizontal cohesion 3.4, 3.6, and 3.6, respectively; vertical cohesion, 3.6, 3.6, and 3.8, respectively).

- Among problem drinkers (AUDIT \geq 8), combat deployed Soldiers reported significantly lower horizontal cohesion than those that were not deployed (mean scores 3.3 and 3.5, respectively).
- Among problem drinkers (AUDIT \geq 8), Sailors that were noncombat deployed reported higher horizontal cohesion than combat deployed and not deployed personnel (mean scores 3.7, 3.5, and 3.6, respectively).
- Among problem drinkers (AUDIT \geq 8), combat deployed Sailors reported significantly lower QOWL than those that were noncombat deployed and not deployed (mean scores 3.3, 3.6, and 3.6, respectively).
- Among nonproblem drinkers (AUDIT $<$ 8), deployed Sailors (combat and noncombat deployed) reported significantly higher job dissatisfaction than Sailors that were not deployed (mean scores 2.7, 2.7, and 2.6, respectively).

Culture of Alcohol and Tobacco Use

Results indicate that, when examining military culture related to alcohol and tobacco use, there is partial support that these results align with Levin's (1991) four qualities of culture. The first two qualities of culture, that attitudes are learned from previous generations and that attitudes are broadly shared by members (such as drinking in the barracks, having friends that use tobacco products, and believing that drinking and smoking are being part of the military), seem to be supported by the data. This indicates that culture may play a role in alcohol and tobacco use.

Results that show that the Army and Marine Corps are more inclined toward alcohol and tobacco use may be a result of these Services having a different force structure with more personnel in nontechnical jobs, as well as a larger number of junior-enlisted males—a group known to report significantly more heavy drinking than other groups of military personnel (Bray et al., 2003).

- Soldiers and Marines in combat units perceived fewer limitations on alcohol policy in the barracks than those in combat support units.
- Air Force combat support units reported significantly lower oversight in the barracks.
- Personnel from combat support and combat service support units reported significantly more inspections than those from combat units.
- Interestingly, drinking was not required to fit in at social functions, with only 14.7% of personnel reporting that it was hard to fit in if one did not drink.
- Personnel from combat units reported drinking in the barracks or on-base housing significantly more than those from combat support units.
- Marines from all unit types had higher reports of drinking in the barracks than personnel in the other Service branches.
- Combat and combat support unit personnel reported drinking in bars significantly more frequently than those in combat service support units.
- Among Marines, personnel in combat units reported drinking significantly more often in restaurants, hotel rooms, and recreational facilities than those in combat support or combat service support units.
- Significantly more respondents from combat units than those from combat support and combat service support units reported having friends that use tobacco products, believed the availability of tobacco made it easy to smoke, and believed that smoking was part of being in the military.

Individual-Level Influences

A number of factors were used to examine individual-level influences of alcohol and tobacco use, including gender, individual reasons for use, attitudes, and other social influences.

- Both men and women in all Services reported relatively high levels of any alcohol use, with men and women in the Marine Corps reporting the greatest amount of drinking during the previous 30 days.
- Marine Corps personnel also reported the highest percentage of hazardous, harmful, and potentially alcohol-dependent drinking levels, with the greatest percentage falling within the harmful range. These findings applied to both male and female Marines.
- The number of drinks to feel drunk among the Marine Corps was highest overall at 8.2 drinks, followed by the Army at 7.5 drinks, the Navy at 6.9 drinks, and the Air Force at 6.2 drinks.

- In general, members of the Air Force and Navy reported less drinking across all drinking variables than members of the Marine Corps and Army.
- Overall, 47.1% of all personnel were drinking at or above hazardous drinking levels.
- Both male and female members of the Marine Corps reported the highest percentages of hazardous, harmful, and possibly dependent drinking.
- In all Services, rates for alcohol dependence were higher among males than among females, with the largest gender difference in the alcohol dependence rate being shown for Marine Corps personnel.

Negative effects of drinking were defined as administrative action, productivity loss, and serious consequences.

- Across Services, females reported fewer negative effects than did males.
- Marine Corps personnel were most likely to report a higher percentage of all three types of negative effects than those in the other three Services; this finding applied to both males and females.
- Air Force personnel reported the fewest negative consequences from drinking.
- For all Service branches, loss of productivity was the most frequently endorsed negative consequence.
- When reasons for drinking were examined by Service in terms of light, moderate, and heavy drinking, persons in the Marine Corps reported the greatest frequencies across all reasons for drinking categories (i.e., social, peers/culture, feeling/taste, and stress).
- Few persons acknowledged drinking as a result of peer pressure, while a somewhat greater endorsement was given for stress and to relieve boredom.
- The most striking finding was that three to nine times as many heavy drinkers compared with light or moderate drinkers indicated that they drank because of peer pressure or because drinking is part of the military culture.
- More than 80% of all personnel with any combat exposure acknowledged past-month alcohol use.
- For those with high combat exposure, the total number of drinking days among drinkers during the past month was lowest for Air Force personnel compared with the other Services.

- Most Services indicated significantly higher rates of heavy alcohol use among high combat exposure personnel compared with personnel with moderate levels of combat exposure.
- High combat exposure Marine Corps personnel showed the largest number of drinks consumed during one drinking occasion (12.4 drinks).
- The reported number of drinks to feel drunk was highest for Marine Corps personnel with high combat exposure (12.4 drinks) and lowest for Air Force personnel (5.9 drinks) with low combat exposure.
- The rates for all three negative effects were lowest among Air Force personnel with low levels of combat exposure.
- Navy prevalence rates for negative effects showed that serious consequences were more than doubled when comparing low (9.6%) versus high (19.9%) combat exposure levels.
- Army personnel did not show significant differences in any of the negative effects by combat exposure levels.
- Marine Corps personnel showed the highest rates of administrative action (14.0%), productivity loss (22.0%), and serious consequences (22.0%) among persons with high combat exposure levels.

Tobacco Use

The following are key findings about individual-level influences on tobacco use.

- Among the Services, individual respondents were likely or highly likely to use cigarettes when drinking alcohol, when with others using tobacco, and/or when anxious or stressed.
- Smokeless tobacco was used more frequently when anxious or stressed or when deployed.
- Among the Services, cigarettes were most often used to relieve stress or to get a break from work.
- Smokeless tobacco and cigars were more apt to be used to relieve stress.
- Any cigarette use, daily cigarette use, and cigar use were more likely to be reported by respondents who were deployed, regardless of combat status.

Stress and Coping

Stress has been shown to exhibit a positive relationship with alcohol use, as well as with other behaviors and health outcomes. Because stress evokes both psychological and physiological responses, it has the potential to seriously affect military readiness. In regard to stress and coping, we found the following.

- More than one in four military personnel reported a high level of perceived stress during the past 6 months.
- The Army showed the highest percentage of personnel reporting high perceived stress at 30.4%; the Air Force showed the lowest percentage at 16.0%.
- Significantly fewer females in the Air Force reported high perceived stress than females in the other three Services.
- Regardless of Service, more personnel who were married with their spouse not present reported high perceived stress than personnel who were not married or personnel who were married with their spouse present.
- Except for in the Air Force, more personnel in pay grades E4 through E6 reported high perceived stress than other pay grades.
- An estimated 34.4% of all personnel who reported high perceived stress indicated heavy alcohol use. The Marine Corps reported the highest percentage of personnel with high perceived stress engaging in heavy alcohol use.
- Among all Services, more than three out of four personnel indicated that they used alcohol to relax.
- Nearly half of personnel in all Services with perceived high stress reported current cigarette use, and nearly one in five reported current smokeless tobacco use.
- The Army had the highest percentage of respondents with high perceived stress who reported cigarette smoking; for smokeless tobacco use, the Marine Corps was highest—with one in four reporting current smokeless tobacco use.
- Nearly two-thirds of personnel in all Services indicated that they used tobacco products to relieve stress.
- Across all sociodemographic groups and Services, more personnel employed predominantly positive coping behaviors than those endorsing negative coping behaviors.
- Women in the Navy (77.7%) and Marine Corps (71.2%) had statistically higher rates of positive coping behavior than did their male counterparts.
- College graduates used more positive coping behavior across military branches than did those with a high school education or some college.
- Percentages of military personnel who endorsed positive coping strategies increased as pay grade increased in all branches of the military.
- Among personnel reporting high combat exposure, an estimated 32.2% indicated heavy alcohol use; Marine Corps personnel with high combat exposure reported the highest percentage. This estimate was nearly twice the proportion of Air Force personnel reporting high combat exposure who were heavy alcohol users.
- Significantly more Marine Corps respondents with high combat exposure indicated that they used alcohol to relax than respondents from the other Services.
- Nearly half of all personnel reporting high combat exposure indicated that they were current cigarette users; one in five reported using smokeless tobacco.
- More than half of personnel across Services who indicated high combat exposure reported that they used tobacco to relieve stress.
- Among personnel reporting a high level of combat exposure, nearly 35% reported high levels of stress; this was significantly different from rates of high stress among persons with low or moderate combat exposure.
- Persons reporting a high level of combat exposure were consistently more likely to indicate high overall stress levels than those reporting a low level of combat exposure; this was the case both for individual Services and for all Services combined.

Culture of Alcohol and Tobacco Use

- The Marine Corps were the most likely to report that a six-pack of beer was allowed in their barracks, but they were the least likely to report that a case of beer or bottle of liquor was permitted in their barracks and that there was no limit on alcohol.

- The Air Force was the only Service branch that showed significant gender differences between the three alcohol policy questions.
- One-third of males and females reported that drinking was part of being in the military.
- On-base housing was the favored drinking location on base for males, and the barracks were the favored drinking location for females.
- The least popular location for drinking on base was the officers' club.
- Off-base housing and bars were the most popular locations for drinking off base.
- Public locations, such as a park, beach, or parking lot, were the least-favored off-base locations for drinking.
- Approximately 60% of military personnel reported that the availability of tobacco products at their installation made it easier to smoke and that most of their military friends smoked.
- Males overall were significantly more likely than females overall to report that the availability of tobacco products made it easy to smoke, that most of their military friends used tobacco products, and that smoking was part of being in the military.

Having a healthy and fit force is key to mission readiness. The findings noted above and other related findings are discussed in greater detail in this report. The report also describes the methodologies used to develop these estimates and suggests areas in need of attention to address key issues surrounding heavy alcohol use and tobacco use.

Chapter 1: Introduction and Background

This report presents findings from the 2006 Department of Defense (DoD) Survey of Unit Level Influences on Alcohol and Tobacco Use Among Military Personnel, conducted by RTI International in Research Triangle Park, North Carolina. The 2006 survey is the first study to provide in-depth information regarding installation, unit, and individual influences on alcohol and tobacco use and stress at selected installations for all Services. Findings from each of the four active-duty components are presented—Army, Navy, Air Force, and Marine Corps—as well as for all Services combined. Although the study included 24 installations, the selected installations were not intended to represent the active force. Rather, installations were selected because they had known relatively high rates of alcohol use or tobacco use to permit a better understanding of the factors that contribute to use. As a result, the installations do not represent a random sample of all military installations or represent the population of the active force. Thus, the prevalence estimates provided in this report represent the population of personnel in the participating installations, not the entire active-duty population. Consequently, many estimates in this report differ from those in the 2005 DoD Survey of Health Related Behaviors Among Military Personnel (Bray et al., 2006).

1.1 Organization of the Report

This chapter discusses the relevance of the survey to the military and objectives for the 2006 unit level survey. For this report, substance use includes use of alcohol and tobacco (i.e., cigarettes, smokeless tobacco, and cigars).

The general methodology for the 2006 survey is presented in Chapter 2, including sampling design, instrument development, data collection procedures, survey performance rates, sample participants and characteristics of participating installations, key definitions and measures, analytic approach, variability

and suppression of estimates, and strengths and limitations of the data.

The next three chapters describe the prevalence and correlates of alcohol and tobacco use at the installation, unit, and individual levels, respectively.

Two appendixes have been included. Appendix A is an executive summary of findings from the focus groups that were conducted at four installations in the continental United States (CONUS) and four installations overseas (OCONUS) (one CONUS and one OCONUS each per Service). Appendix B contains a copy of the survey questionnaire for this study.

1.2 Overview and Objectives

Poor health practices among military personnel, including alcohol misuse and tobacco use, interfere with DoD's mission to maintain a high level of military readiness in the armed forces and can increase the risk for a number of negative health behaviors and conditions later in life. This research was undertaken to provide greater understanding of the factors underlying alcohol and tobacco use among military personnel. A combination of preexisting measures and information derived from focus group interviews was used to identify installation-, unit-, and individual-level influences on alcohol and tobacco use.

Major objectives of the survey were as follows:

- to determine the nature and extent of installation-based influences on alcohol and tobacco use, including region, availability, and norms
- to determine the nature and extent of unit-based influences on alcohol and tobacco use, including unit type, policy enforcement, and perceived norms for use
- to identify and assess individual-level risk factors for alcohol and tobacco use among military personnel, including personal attitudes

toward use, stress, and sociodemographic characteristics

Understanding the relative contribution of risk factors for alcohol and tobacco use provides critical information to help bolster current intervention and prevention efforts and may aid in considerations of treatment approaches and needs for personnel. The present large-scale investigation of risk factors for alcohol and tobacco use at the installation, unit, and individual levels supports strategies to enhance military readiness and DoD objectives to promote readiness and health and wellness through reduction of substance abuse.

1.3 Background

Alcohol and tobacco use have been long-standing problems in the military. The armed forces have experienced problems with alcohol from the earliest days of military service, in part because heavy drinking has been an accepted custom and tradition (Bryant, 1979; Schuckit, 1977). Within the predominantly male U.S. military population, heavy drinking and the ability to “hold one’s liquor” have served as tests of “suitability for the demanding masculine military role” (Bryant, 1974). A common stereotype has been to characterize hard-fighting Soldiers as hard-drinking Soldiers. Alcoholic beverages have been available to military personnel at reduced prices at military outlets and, until recently, during “happy hours” on base (Bryant, 1974; Wertsch, 1991). In addition, alcohol and tobacco have been used in the military to reward hard work, to ease interpersonal tensions, and to promote unit cohesion and camaraderie (Ingraham, 1984).

More recently, however, military policy has stressed the negative effects of alcohol and tobacco use and has sought to foster responsible use of both substances (DoD, 1994, 1997). Since 1972, DoD has established prevention and treatment policies to confront alcohol abuse and alcoholism, as well as tobacco use among military personnel (DoD, 1972, 1980, 1983, 1985, 1994, 1997). In 1986, these directives were combined with ones aimed more broadly at health behaviors, to form a comprehensive health promotion policy that recognized the value of good health and healthy

lifestyles for military performance and readiness (Bray et al., 2003, 2006; DoD, 1994). Under this policy, programs were directed toward preventing the misuse of alcohol, providing counseling or rehabilitation to abusers, reducing tobacco use, and providing education to various target audiences (Bray, Kroutil, & Marsden, 1995).

Despite these various policy initiatives, rates of heavy drinking (i.e., five or more drinks per typical drinking occasion at least once a week) have remained remarkably stable over the past two decades, increased significantly between 1998 and 2002, and remained at higher levels in 2005 (Bray et al., 2003, 2006).

Notwithstanding these findings, little is known about the factors that explain heavy drinking among military personnel, which could help guide more effective prevention efforts. For example, in a recent study of regional differences in heavy alcohol use among military personnel, Bray et al. (2005) found that personnel stationed in Asia were more likely to be heavy drinkers than those stationed in Europe, CONUS, or Hawaii. Unfortunately, the study was not able to pinpoint the reason(s) for the higher rates of heavy drinking in Asia. Possible explanations included regional culture, military culture, availability of alcohol, freedom from restraints, and selection effects. It is clear that future studies need to examine regional alcohol and tobacco use in greater detail and to include measures specific to potential explanatory domains in order to permit a more complete understanding of underlying causal mechanisms of heavy drinking.

Tobacco use rates have shown notable declines over the past 25 years (Bray et al., 2003, 2006). Of concern, however, was a recent upsurge, with the prevalence of any cigarette smoking increasing significantly between 1998 and 2005. Of similar concern was the significant increase in smokeless tobacco use. Of interest is the considerable variation in tobacco use among Services, suggesting that individual, cultural, or environmental influences may play a role in determining rates of tobacco use.

Smoking-related illnesses take a toll on the physical readiness of the armed forces. Research has

demonstrated a strong association between the use of tobacco and negative health outcomes, such as cardiovascular diseases, various cancers, and pulmonary disease (Haddock et al., 1998). The use of tobacco also has been associated with negative performance outcomes, such as higher absenteeism, diminished motor and perceptual skills, and poorer endurance (Chisick, Poindexter, & York, 1998). In addition to concerns about illnesses, there are concerns about the cost of smoking. Each year, DoD spends an estimated \$875 million on smoking-related health care and productivity loss (Conway, 1998). Yet another reason for concern is that most of the persons currently serving in the armed forces will eventually return to civilian life, and DoD has an obligation to return veterans to the civilian sector in the healthiest condition possible (Chisick, Poindexter, & York, 1998). Finally, there is evidence that smoking decreases military readiness (Robbins et al., 2002; Jensen, 1986; Conway & Cronan, 1992) and is predictive of early discharge (Klesges, Haddock, Chang, Talcott, & Lando, 2001).

Epidemiologic studies provide an excellent source of data on the prevalence of alcohol and tobacco use and related problems. However, the utility of general epidemiologic studies may be greatly enhanced when data about the risk factors for substance abuse are also gathered (Kellem & Van Horn, 1991). Not all military personnel who drink will abuse alcohol, nor will all drinkers go on to develop symptoms of alcohol abuse and dependence. Similarly, personnel who smoke vary in their intensity of use. Some smoke occasionally, some every day but at moderate levels, and some heavily. Thus, understanding the individual and environmental influences that increase or decrease the risk for alcohol and tobacco use is critical for developing effective preventive interventions. The present survey was designed to provide a more complete understanding of substance use among military personnel, by conducting a comprehensive examination of installation, unit, and individual factors associated with heavy drinking and tobacco use in the military.

This study included risk factors as key constructs in the survey of alcohol and tobacco use in high- and low-risk units to increase the likelihood that the most important promoters (or inhibitors) of substance use will be identified and included as potential targets for intervention. Risk factors are characteristics that increase the likelihood that a person will develop a substance use disorder. They can be found within the person (i.e., psychological, biological), the social group or immediate environment (e.g., unit), or within more macro-level environments (e.g., installation). Moreover, as the number of risk factors a person is exposed to increases, so does the probability of developing a disorder. Thus, identifying and targeting a multitude of factors may increase the potential efficacy of interventions (Newcomb & Felix-Ortiz, 1992).

1.3.1 Individual-Level Influences

Research with college populations has identified adolescent deviant behavior, depression, gender, impulsiveness, deviant coping, and a propensity for risk-taking as being associated with heavy drinking and tobacco use (Bates & Labouvie, 1997; MacDonald & Fleming, 1991; Smith & Brown, 1999). Because many military personnel are in a high-risk age range (i.e., 18 to 25), it is likely these same variables constitute risk factors for them. Risk factors have generally been conceptualized along demographic, intrapersonal, interpersonal, and contextual domains. Additional intrapersonal risk variables for alcohol and tobacco use disorders include positive expectancies and early initiation of substance use (Newcomb & Felix-Ortiz, 1992; Hawkins, Catalano, & Miller, 1992). What is missing from this previous work is the interaction between environmental and individual influences.

Stress is an intrapersonal factor with strong implications for alcohol and tobacco use. Military men and women experience a wide range of stressors as part of their military work assignments and duties. Stressors may result from the physical or mental challenges required of the job, exposure to trauma associated with combat, or conflicts between military and family responsibilities. Women may experience additional stressors as a result of being in a predominantly male

environment or being exposed to sexual harassment (Bray, Fairbank, & Marsden, 1999). A large-scale study of active-duty military personnel showed that among men, stress was associated with an increased risk of heavy drinking (work stress only), illicit drug use (work and family stress), and cigarette use (work and family stress). Among women, the stress of being in an overwhelmingly male environment was associated with increased odds of illicit drug and cigarette use (Bray, Fairbank, & Marsden, 1999). Other studies have indicated strong links between trauma exposure, victimization, and posttraumatic stress disorder and alcohol use problems (Logan, Walker, Cole, & Leukefeld, 2002).

1.3.2 Environmental Influences

In addition to individual influences, environmental factors strongly influence alcohol and tobacco use behaviors. Military unit-level and installation-level influences were conceptualized as environmental influences. Environmental characteristics may include aspects of social situations. For example, cigarette use may be initiated as a result of a desire to socialize or fit in with others relegated to smoking areas or as a way of taking a break from the workday. Civilian research suggests that heavy drinking is more likely to occur during evenings, weekends, or discount pricing “happy hours” (Single, 1993). Availability, promotion, and pricing of alcohol and tobacco products are also important correlates of drinking behavior. Moreover, significant reductions have been made in adolescent and young adult substance use by policy changes that restrict alcohol and tobacco access for those who are underage, by ordinances that ban alcohol billboard advertising, by restrictions of alcohol at certain social or sporting events, and by enforcements of the minimum purchase age laws (Chaloupka et al., 2002; Kamro & Toomey, 2002; Treno & Lee, 2002). These laws and restrictions were expected to vary across installations, in particular among those located OCONUS.

Cultural context is also part of the broader category of environmental influences thought to have an impact on alcohol and tobacco use; this category includes the

physical environment and social influence and selection processes (Abby, Smith, & Scott, 1993; Bradizza, Reifman, & Barnes, 1999; Ennett & Bauman, 1994; Rice, Carr-Hill, Dixon, & Sutton, 1998). Social influence includes a variety of factors, such as peer use, perceived norms, social motives (e.g., drinking to be sociable, smoking to fit in), and availability, that have been shown to predict both use and substance-related problems among civilian populations (Jones-Webb et al., 1997; Oostveen, Knibbe, & deVries, 1996; Smith, Abbey, & Scott, 1993). Persons who drink heavily may self-identify or choose to associate with others who also engage in heavy alcohol use. Similarly, persons may be selectively assigned to groups based on common characteristics (e.g., age, gender) that may be related to behaviors of concern such as alcohol and tobacco use. Ennett and Bauman (1994) found that both influence and selection processes were important in explaining adolescent cigarette smoking. Thus, influences in the immediate or larger military environment that promote access to alcohol or tobacco or enhance norms regarding smoking and/or excessive alcohol use, and that are largely unknown in this population, are critical to identify.

This report provides the first in-depth assessment of installation- unit-, and individual-level influences on alcohol and tobacco use among active-duty military personnel.

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Chapter 2: Methods

This chapter describes the methodology used for the 2006 Department of Defense (DoD) Survey of Unit Level Influences on Alcohol and Tobacco Use Among Military Personnel. This discussion includes an overview of the sampling design, data collection procedures, and survey performance rates. In addition, the survey respondents and sociodemographic characteristics of the eligible respondent population are described. An overview of data editing and analysis techniques also is provided. Finally, a description of measures used and displayed within this report is provided. Many of the activities, such as questionnaire development, sampling, and support for field operations, were collaborative efforts that involved the cooperation of DoD, the individual Services, and the research team.

2.1 Sampling Design

The target population for this study consists of all active-duty military personnel stationed at 24 installations at the time of data collection. These installations, including six from each Service branch, were identified by DoD and represent the major power projection platforms in the continental United States (CONUS) and overseas (OCONUS). A large number of personnel aged 18 to 25 in deployable combat and support units who are at high risk for alcohol abuse are stationed at these installations.

A main objective of this study was to collect data on unit-level influences on alcohol and cigarette use in a variety of unit types from each Service branch. A stratified two-stage sample design was used in this study. Each installation formed a sampling stratum and the numbers of unit-level companies, squadrons, and other divisions to be selected were allocated to each installation according to the number of units at the installation. A total of 200 units were selected, 50 from each Service branch (25 from CONUS and 25 from OCONUS within each Service branch). These units were then proportionally allocated to each installation. A simple random sample of the units was selected at each installation, and data collection personnel attempted to administer the survey to all personnel from these units.

The construction of the sampling frame for the selection of units was based primarily on data obtained from the Defense Manpower Data Center (DMDC). A list of units based at each of the 24 installations, including the number of personnel by pay grade and gender within each unit, was provided. This information was verified against data from a public Web site (www.globalscurity.org). Although the DMDC lists agreed with data from the Web site for most of the installations, it was noted that the numbers of units and personnel provided by DMDC were substantially smaller than those shown on the Web site for some installations. In these instances, the DMDC data were replaced with that from the Web site in the sampling frame. Based on anecdotal experience, it was also felt that the DMDC data regarding some installations were incomplete; however, data for these installations were not available on the Web site. In these instances, liaison officers at these installations were contacted and requested to provide updated, accurate unit and personnel counts for the sample selection.

The recruitment of selected units was completed without incident. A few selected units were replaced because of change of station or other reasons; in total, 15,221 persons from 203 units participated in the survey.

2.2 Data Collection

Questionnaire administrations took place from October 2006 through March 2007 at 24 selected installations located worldwide. Data collection was scheduled to be completed by the end of January 2007, but was extended because of delays in obtaining cooperation at selected installations. A Service Liaison Officer (SLO) was appointed for each Service, and an Installation Liaison Officer (ILO) at each participating installation was appointed to coordinate survey activities.

Each SLO performed a variety of tasks that were vital to a successful data collection effort. Specifically, the SLOs

- informed the Services and selected installations about the survey by sending a series of notifications to appropriate command levels,
- obtained ILO names and contact information for the RTI research team, and
- worked with RTI staff to coordinate survey scheduling and preparations at the installation and handled problems with command cooperation.

ILOs were also integral to the data collection effort and before the team arrived were responsible for

- storing the survey instruments,
- receiving lists of the selected units,
- arranging rooms for the survey sessions,
- notifying personnel from selected units of their selection,
- scheduling personnel into one of the survey sessions, and
- arranging for an ombudsperson at each scheduled data collection session.

During the field team visits, the ILOs were responsible for monitoring and encouraging attendance of personnel from selected units at the sessions and documenting the reasons for absence. The level of effort required by each ILO varied depending on the number of units selected and the number of personnel in those units, as well as on the turnout of participants in response to their initial notification. At those installations where turnout was high, the ILOs spent considerably less time than at those where turnout was low. In the latter case, the ILO duties were more time consuming because a higher percentage of “no shows” had to be contacted and rescheduled into a new data collection session. RTI field teams collected data in survey sessions at the 24 installations selected for the study. The size of these teams varied from two to four persons, depending on the number of units selected and their sizes. In general, RTI coordinated arrangements with ILOs for the data collection itinerary to permit us to survey personnel at installations during a 1-week visit. Additional time was allowed at locations that had extremely large numbers of personnel selected or that had personnel dispersed over larger geographical areas. On these data collection days, team members typically started a group session every hour, holding approximately six sessions per day. If necessary, the

team members split and worked alone to conduct concurrent sessions at the installation. Before data collection began, RTI held a 1-day data collection training session to ensure that teams were familiar with all procedures to conduct the survey.

The field teams’ major responsibilities were to

- establish travel itineraries consistent with ILO recommendations,
- coordinate final preparations with the ILO at the installation,
- conduct scheduled survey sessions,
- ship completed survey forms from installations for optical scanning, and
- report to RTI central staff on the completion of the survey at each site.

At the group sessions, field teams described the purpose of the study, assured the respondents of anonymity, informed participants of the voluntary nature of the survey, distributed introductory handouts, ensured that an ombudsperson was present for each group administration to attest that teams explained the voluntary nature of participation, and showed personnel the correct procedures for marking the questionnaire. Then team members distributed the optical-mark questionnaires to participants, who completed and returned them.

During the visit to an installation, team members attempted to survey all personnel assigned to selected units that were scheduled by the ILO. Whenever possible, personnel who failed to attend their scheduled session were contacted and placed into a subsequent one. At the completion of the site visit, field teams inventoried completed questionnaires, reconciled the inventory with counts of personnel who completed the survey, and packaged the questionnaires for shipment. The teams then shipped the questionnaires to Pearson Assessments in Minnesota for optical-scan processing and reported attendance and completion data to RTI.

2.3 Performance Rate and Characteristics of Respondents

While issues occurred occasionally during data collection (such as selected units being away on duty), the response rates at the unit level and individual level were exceptionally high in general. Table 2.1 shows the numbers of units selected and persons expected to attend the interview sessions, as well as the numbers actually achieved.

A total of 15,221 completed or partially completed questionnaires were received. Table 2.2 presents the distributions of the respondents by age, gender, and other sociodemographic characteristics. It can be seen that the majority of the respondents were young male personnel and the respondents were nearly equally distributed among the four Service branches, as well as between CONUS and OCONUS regions. Note that there were approximately 2,400 respondents from the Marine Corps whose demographic information was missing because the questionnaire pages containing these data were mistakenly destroyed by the scanning subcontractor before the data were processed

2.4 Data Editing Procedures

As with any survey data collection, responses to individual items in this study had the potential to be inconsistent with one another. Identification and correction of such issues (where possible) occurred during data editing. Upon receiving the optically scanned data as an ASCII file from the scanning subcontractor, a complete SAS data file was created, including initial versions of any derived or constructed variables used in analysis. Using this SAS data file, the data were scrutinized for internal consistency by comparing responses to various items for each Service member surveyed. When inconsistencies were identified, three main strategies were applied to address the discrepancies, depending on the availability of supporting information:

- When the number of discrepant cases was relatively small and involved a write-in field, an image of the physical questionnaire was consulted to aid in

determining the correct data. When cases qualifying for this method of resolution could not be reconciled in this way, one of the two other strategies was employed.

- For cases that involved a strictly multiple choice set of response options, and in cases where viewing the physical questionnaire was not feasible or did not provide resolution of the issue, other data items from the survey were used to determine a logical assignment (or logical edit) for the discrepant values. The set of items used as the basis for logical assignment were developed in consultation with substantive experts from the field where the problematic question originated.
- When no other methods were successful or appropriate for correcting inconsistencies, the data were either left unchanged (and inconsistent), or were assigned to a general purpose response category of “bad data,” depending on the severity of the discrepancy and the input of the substantive expert from the field where the problematic question originated.

Any logical editing for a particular item was coded in such a way to make it identifiable as logically assigned data as opposed to reported data. Any derived variables were recalculated after editing, using the logically assigned values in lieu of inconsistent data.

2.5 Suppression of Estimates

In this report, unreliable estimates (indicated with a plus sign [+] in tables and figures) were suppressed. That is, proportions and means that could not be reported with confidence because they were based on small sample sizes or had large sampling errors (i.e., low precision) were suppressed. The sample size restriction used suppressed an estimate when the number of observations on which it was based (i.e., the denominator sample size) was fewer than 30 cases. The large sampling error restriction had two parts based on whether the estimate was a mean or a proportion. For estimates expressed as means (e.g., average ounces of ethanol), estimates with relative standard errors (RSEs) greater than 50% of the estimate were suppressed.

The RSE is computed by dividing the standard error of the estimate by the estimate. For estimates expressed as proportions (e.g., the proportion of heavy drinkers), a

Table 2.1 Number of Units and Persons Who Attended the Interview Sessions

	Units	Expected	Actual	Final
Camp Casey	14	919	934	933
Fort Benning	6	743	377	376
Fort Knox	4	320	330	330
Fort Lewis	18	900	1,238	1,237
Garrison Grafenwoehr	9	644	408	406
Camp Zama	5	413	209	205
Naval Air Station Jacksonville	5	400	525	510
Naval Air Station Oceana	8	514	464	449
Naval Station Pearl Harbor	11	574	389	389
Naval Station San Diego	11	550	525	525
Naval Support Activity Naples	8	706	604	541
Naval Forces Marianas	7	1,282	617	615
Beaufort	5	436	406	399
Camp Pendleton	14	1,400	809	809
Kaneohe Bay	5	1,650	1,206	1,015
Camp Foster	13	2,082	1,774	1,741
Camp Hansen	6	692	685	671
Marine Corps Air Station Miramar	8	1,111	797	786
Dyess Air Force Base	7	1,273	857	662
Elmendorf Air Force Base	5	600	674	670
Hickam Air Force Base	9	855	378	367
Kunsan Air Force Base	8	580	583	583
Langley Air Force Base	11	1,086	811	601
McChord Air Force Base	7	650	478	469

suppression rule based on the RSE of the natural log of the estimated proportion (p) was used. Specifically, estimates in tables and figures were suppressed when $RSE[-\ln(p)] > 0.225$ for $p \leq 0.5$, and $RSE[-\ln(1-p)] > 0.225$ for $p > 0.5$. Note that $RSE[-\ln(p)] = RSE(p) / [-\ln(p)] = SE(p) / [-\ln(p)]$, where $SE(p)$ denotes the standard error of p , or the estimated proportion. This rule for proportions based on the natural log of the RSE rather than on the RSE itself was chosen because the latter has been observed to have some undesirable properties for proportions. Specifically, a rule based on the RSE of the estimate imposes a very stringent suppression requirement on small proportions but a very lax requirement on large proportions. That is, small proportions must have relatively large effective sample sizes to avoid being suppressed, whereas large proportions require much smaller sample sizes. The rule based on the natural log of the RSE of the estimate is more liberal in allowing small proportions to avoid being suppressed, but more stringent with regard to suppression of large proportions. For example, under the rule based on the $RSE[-\ln(p)]$, percentages of about 1%

would be suppressed unless they were based on an effective sample size of about 100 or more respondents, and percentages of 20% would be suppressed unless they were based on an effective sample size of about 30 respondents. Using a rule for proportions based on $RSE(p) > 0.50$ would require an effective sample size of 400 respondents for percentages of about 1% and an effective sample size of only 16 respondents for percentage estimates of about 20%. Very small estimates (i.e., $< 0.05\%$) that were not suppressed under these rules, but that rounded to zero, also were suppressed and are shown as two asterisks (**) in the tables and figures.

Table 2.2

Sociodemographic Characteristics of the Study Participants

Sociodemographic Characteristics	Army		Navy		Marine Corps		Air Force		Total	
	n	%	n	%	n	%	n	%	n	%
Gender										
Male	3,080	89.0	2,690	83.0	2,445	90.2	2,634	80.3	10,849	71.3
Female	381	11.0	551	17.0	267	9.8	648	19.7	1,847	12.1
Missing									2,525	
Total	3,461	100.0	3,241	100.0	2,712	100.0	3,282	100.0	15,221	83.4
Race/Ethnicity										
White, non-Hispanic	1,915	55.4	1,692	52.4	1,615	59.7	2,159	66.1	7,381	48.5
Black, non-Hispanic	654	18.9	633	19.6	246	9.1	466	14.3	1,999	13.1
Hispanic	539	15.6	512	15.8	651	24.1	388	11.9	2,090	13.7
Other	351	10.1	395	12.2	194	7.2	251	7.7	1,191	7.8
Missing									2,560	
Total	3,459	100.0	3,232	100.0	2,706	100.0	3,264	100.0	15,221	83.2
Education										
High school or less	1,651	48.1	1,251	39.0	1,526	56.6	619	18.9	5,047	33.2
Some college	1,445	42.1	1,585	49.4	945	35.1	1,874	57.3	5,849	38.4
College graduate or higher	338	9.8	375	11.7	224	8.3	775	23.7	1,712	11.2
Missing									2,613	
Total	3,434	100.0	3,211	100.0	2,695	100.0	3,268	100.0	15,221	82.8
Age										
17–20	521	15.1	396	12.3	636	23.5	212	6.5	1,765	11.6
21–25	1,388	40.2	1,127	35.0	1,383	51.0	1,074	33.0	4,972	32.7
26–34	1,039	30.1	1,105	34.3	520	19.2	1,209	37.2	3,873	25.4
35–60	503	14.6	593	18.4	171	6.3	759	23.3	2,026	13.3
Missing									2,585	
Total	3,451	100.0	3,221	100.0	2,710	100.0	3,254	100.0	15,221	83.0
Family Status										
Not married	1,660	47.9	1,607	49.4	1,566	57.5	1,355	41.3	6,188	40.7
Married, spouse not present	425	12.3	263	8.1	184	6.8	362	11.0	1,234	8.1
Married, spouse present	1,381	39.8	1,385	42.5	974	35.8	1,567	47.7	5,307	34.9
Missing									2,492	
Total	3,466	100.0	3,255	100.0	2,724	100.0	3,284	100.0	15,221	83.6
Pay Grade										
E1–E3	938	26.8	743	22.5	1,111	21.9	495	14.8	3,287	21.6
E4–E6	2,112	60.3	2,086	63.3	1,308	25.8	1,911	57.0	7,417	48.7
E7–E9	248	7.1	278	8.4	127	2.5	368	11.0	1,021	6.7
W1–W5	39	1.1	7	0.2	17	0.3		0.0	63	0.4
O1–O3	117	3.3	95	2.9	131	2.6	397	11.8	740	4.9
O4–O10	29	0.8	52	1.6	34	0.7	132	3.9	247	1.6
Missing									2,437	
Total	3,502	99.5	3,297	98.9	5,068	53.8	3,354	98.5	15,221	83.9
Region										
1	1		2		3		4			
CONUS	1,956	55.9	1,510	45.8	1,963	38.7	1,706	50.9	7,135	46.9
OCONUS	1,546	44.1	1,787	54.2	3,105	61.3	1,648	49.1	8,086	53.1
Total	3,502	100.0	3,297	100.0	5,068	100.0	3,354	100.0	15,221	100.0

2.6 Sample Weighting and Estimation Methods

2.6.1 Sample Weighting

Sample weights assigned to persons primarily reflect the inverse of the probability that they were selected. A minor adjustment of the sample weights was made to account for nonrespondents.

Let N_h and n_h be the number of units of the h^{th} installation on the sampling frame and the number of units to be selected. Units in this installation were selected with equal probability:

$$\pi_h = n_h / N_h.$$

Because all persons in a selected unit were invited to participate in the survey, the probability that a person in a selected unit was selected is one. Therefore, the overall probability that a person in the h^{th} installation was selected is simply π_h . The sample weight is the inverse of this selection probability; that is,

$$w_h = 1 / \pi_h.$$

If the number of persons counted for participating in the survey in the h^{th} installation is denoted by M_h and the actual number of persons included in the data file by m_h , the sample weight was adjusted by the ratio M_h / m_h and the final weight is

$$w_h^* = w_h \times (M_h / m_h).$$

2.6.2 Estimation Methods

The analysis of the data collected in this survey required the use of statistical estimation methods that properly incorporate the sample weights and other sample design features. Procedures for survey data analysis provided in commercial statistical software such as SAS, SUDAAN, and Stata may be used in these instances. The following is a sample SUDAAN program for estimating the mean and standard error of the reported largest number of drinks by Service branch and location.

Note that the sample design is specified as sampling without replacement (WOR). Because the sampling fraction in the selection of units was quite large at some installations, the use of WOR would produce smaller variance estimates than with replacement sampling (WR), which may not be a good approximation for the sample selection process used in this survey. The data file was sorted by installation identification number (installation in the data file) and the unit identification number (variable name FSU in the data file), the stratification variable, and the sampling unit as indicated in the NEST statement. A complication of using WOR design is that data on the number of units at each installation and the number of persons in each selected unit must be provided. The number of units at each installation was included in a separate data file and was merged onto the survey analysis data file. Because all persons in a selected unit were selected, the number of persons in a unit and the number of persons selected was obtained by counting the number of persons by unit in the analysis data file.

```
PROC sort data=SAS_dataset;
  BY installation_id unit_id;
RUN;

PROC DESCRIPT DATA=SAS_dataset
DESIGN=WOR;
  NEST installation_id unit_id;
  TOTCNT No_of_units_in_an_installation
no_of_persons_in_a_unit;
  SAMCNT No_of_units_selected
no_of_persons_selected;
  WEIGHT sample_weight;
  SUBGROUPS CONUS service;
  LEVELS 2 4;
  TABLE service*CONUS;
  VAR largest; /* reported largest
number of drinks */

  SETENV DECWIDTH=5 COLWIDTH=15;
  PRINT NSUM MEAN SEMEAN / WSUMFMT=F9.0
NSUMFMT=F6.0;
  OUTPUT NSUM MEAN SEMEAN TOTAL;
RUN;
```

2.7 Key Definitions and Measures

2.7.1 Sociodemographic Characteristics

The sociodemographic characteristics examined in this report include gender, race/ethnicity, education, age, marital status, family status, pay grade, and region. Definitions for these different characteristics are described below.

Gender: Gender was defined as male or female.

Race/Ethnicity: Following the current U.S. Bureau of the Census classification, personnel were divided into four racial/ethnic groups: White, non-Hispanic; African American, non-Hispanic; Hispanic; and “Other” (including all other persons not classified elsewhere, such as Native Americans or Asians).

Education: Education was defined as the highest level of educational attainment. Categories include high school or less, some college, and college degree or beyond. Personnel with General Equivalency Diplomas (GEDs) were classified as high school graduates.

Age: Age of respondents was defined as current age at the time of the survey. For several of the analyses presented in this report, estimates are presented for the age groups 20 or younger, 21 to 25, 26 to 34, and 35 or older. In situations where estimates are provided for age groupings other than these, the alternate age groupings are based on categories specified by one or more Services (e.g., for medical screenings).

Family Status: Family status was defined in terms of marital status and accompanied status. Categories include not married (including personnel who were living as married, single, widowed, divorced, or separated), married spouse not present (including those who were legally married and whose spouse was not living at the member’s present duty station), and married spouse present (those who were legally married and whose spouse was living at the member’s duty station).

Pay Grade: Military pay grades for enlisted personnel were grouped as E1 to E3, E4 to E6, and E7 to E9. Pay grades for commissioned officers and warrant officers were grouped together as O1 to O6 and W1 to W5, respectively.

Region: Region refers to the location of the installation where personnel were stationed at the time of the survey and includes installations in the 48

contiguous states within the continental United States (CONUS) and installations outside the continental United States (OCONUS).

Sampled units were classified as one of three types: combat, combat support, or combat service support. This classification was assigned based on what representatives from each unit described as their primary job responsibilities.

Combat: Combat units are those whose primary mission is to engage enemy units and targets.

Combat Support: Combat support refers to units whose primary mission is to provide operational assistance and fire support to combat units. Units within combat support provide specialized support in the areas of chemical warfare, communications, intelligence, and security.

Combat Service Support: Combat service support refers to units whose primary mission is to provide logistical support to combat units. Units within combat service support provide specialized support in the areas of supply, maintenance, transportation, health services, and other services.

Participants were asked about whether they had been combat deployed or noncombat deployed. They were also given an opportunity to say that they had not been deployed. Definitions for each are as follows.

Combat Deployed: Combat deployed refers to deployment to an operation in a designated combat or peacekeeping zone.

Noncombat Deployed: Noncombat deployed refers to any deployment other than combat or peacekeeping missions. Noncombat deployment may include exercises or training or humanitarian/relief missions.

Not Deployed: Not deployed is defined as not being deployed on combat or noncombat deployment, or deployed less than 30 days in a designated combat or peacekeeping zone.

2.7.2 Reference Periods

In this report, estimates are given for the following time periods.

Past 30 Days: Occurrence of the behavior (e.g., heavy alcohol use, exercise) in the 30 days prior to the survey (also referred to as “past month” or “current” use or behavior).

Past 6 Months: Occurrence of the behavior (e.g., stressors) in the 6 months prior to the survey.

Lifetime: Occurrence of the behavior or experience (e.g., deployment experiences) at least once in a person's lifetime.

2.7.3 Alcohol Use Measures

Measures of substance use for the survey are consistent with those used in the DoD Health Behavior Surveys, where possible (e.g., Bray et al., 2006), and with those in major national surveys, such as the National Survey on Drug Use and Health (NSDUH). Alcohol use was measured in terms of the quantity of alcohol consumed and the frequency of drinking. Alcohol use has been expressed in summary form as the average number of ounces of absolute alcohol (ethanol) consumed per day and as drinking levels.

Any Alcohol Use: Persons who reported any drinking during the past month.

Days Drinking: Total number of days drinking during the past month, among drinkers.

Heavy Alcohol Use: Persons who consumed five or more drinks per typical drinking occasion (four or more for women) at least once a week in the 30 days prior to the survey.

Days Heavy Drinking: Total number of heavy drinking days during the past month, among heavy drinkers.

Average Daily Ounces of Ethanol: The average number of ounces of ethanol consumed on a typical drinking day. This average is computed by summing the total amount of ethanol ingested from the consumption of each of the three types of alcohol (beer, wine, and liquor) over the 30 days prior to the survey and dividing by the number of drinking days in the 30 days prior to the survey. Total ounces of ethanol consumed for each type of alcohol was calculated by taking the product of the following numbers: number of days the alcohol was consumed, percentage ethanol for the type of drink consumed, number of ounces consumed per drink, and number of drinks consumed. The assumed percentage of ethanol for each type of drink is as follows: regular beer = 5%, light beer = 4%, malt liquor = 7%, ice-brewed beer = 6%, regular (table, dinner) wine = 14%, fortified wine = 20%, wine cooler = 6%, and liquor = 50%.

Binge Drinking: Persons having five or more drinks (four or more for women) on a single occasion at least once in the past 30 days.

Problem Drinking Levels: The measure of problem drinking levels and possible alcohol dependence was determined using the Alcohol Use Disorders Identification Test (AUDIT). The AUDIT was developed by the World Health Organization (WHO) as a simple method of screening for excessive drinking and to assist in brief assessment. The AUDIT consists of 10 questions, each scored from 0 to 4, with a total score ranging from 0 to 40. Scores between 8 and 15 are indicative of *hazardous drinking*, scores between 16 and 19 suggest *harmful drinking*, and scores of 20 or above clearly warrant further diagnostic evaluation for *alcohol dependence*.

Negative Effects of Alcohol Use. The prevalence of adverse effects associated with alcohol use in the past 30 days was examined, and four summary measures of alcohol-related negative effects were created.

Administrative Action: The measure of administrative action refers to one or more instance of actions, including letter of counseling, letter of reprimand, Article 15, Page 13.

Productivity Loss: The measure of productivity loss refers to two or more factors of productivity loss. This is defined as either 2 or more days in the past 30 days in which any one of the following behaviors occurred or the occurrence of two or more factors on 1 or more days in the past 30 days:

- being hurt in an on-the-job accident
- being late for work or leaving early
- not coming to work at all
- performing below a normal level of performance
- working while drunk
- being called in during off-duty hours and reporting to work feeling drunk

Serious Consequences: The measure of alcohol-related serious consequences refers to the occurrence of three or more of the following problems in the past 30 days:

- driving a car after drinking
- feeling sick or throwing up after drinking
- being late for work because of drinking, a hangover, or an illness caused by drinking

- getting into physical fights when drinking
- experiencing problems in relationships because of drinking
- neglecting obligations to family or work for 2 or more days because of drinking
- getting into sexual situations later regretted
- being arrested for drunken driving or other drunken behavior
- having sex when it was not wanted because of drinking

2.7.4 Tobacco Use Measures

The following definitions were used for tobacco measures.

Any Cigarette Use: Persons who reported smoking at least 100 cigarettes during their lifetime and at least 1 cigarette within the past month.

Daily Cigarette Use: Persons who reported any cigarette use and reported smoking one or more cigarettes per day during the past month.

Smokeless Tobacco Use: Persons who reported using smokeless tobacco within the past month.

Cigar Use: Persons who reported smoking one or more cigars within the past month.

Symptoms of Nicotine Dependence: Nicotine dependence among cigarette smokers was computed using the Fagerstrom Test for Nicotine Dependence. The scale consists of six questions, with a total score ranging from 0 to 10. A score between 0 and 4 was labeled low dependence, a score of 5 or 6 was labeled moderate dependence, and a score of 7 or greater was considered high dependence.

Attempted to Stop Smoking Cigarettes in Past 6

Months: Persons who reported a serious attempt to stop smoking cigarettes during the past 6 months.

Started Smoking Cigarettes since Joining the

Military: Persons who reported that they had started smoking cigarettes since joining the military.

Successfully Quit Smoking Cigarettes since Joining

the Military: Persons who reported that they had quit smoking cigarettes since joining the military and also did not report smoking cigarettes within the past month.

Uses Smokeless Tobacco because of Restrictions:

Persons who reported that they had started using

smokeless tobacco because of military restrictions on cigarette use.

Using Smokeless Tobacco Is Easier than Going

Outside: Persons who indicated that they had ever used smokeless tobacco products because it was easier than having to go outside to smoke.

Places to Buy Cigarettes Make It Easy to Smoke:

Persons who responded “Agree” or “Strongly Agree” to the statement, “The number of places to buy cigarettes and other tobacco products at this installation makes it easy to smoke.”

Smoking Is Part of Being in the Military:

Persons who responded “Agree” or “Strongly Agree” to the statement, “Smoking or using other tobacco products is part of being in the military.”

Supervisor Smokes Cigarettes: Persons who responded affirmatively to the item, “Do any of your supervisors smoke?”

Supervisor Uses Smokeless Tobacco: Persons who responded affirmatively to the item, “Do any of your supervisors use smokeless tobacco?”

Supervisor Smokes Cigars: Persons who responded affirmatively to the item, “Do any of your supervisors smoke cigars?”

Started Smokeless Tobacco Use since Joining

Military: Persons who responded affirmatively to the item, “Have you started using smokeless tobacco since joining the military?”

Individual Influences on Tobacco Use:

Persons responded as to how likely they were to use tobacco products in the following situations:

- When I am with other people who are smoking or using other tobacco products
- When I am offered a cigarette or another tobacco product
- When I am drinking alcohol
- When I am very anxious or stressed
- When I am drinking coffee
- When I need something to get through a difficult day

Situational Influences on Tobacco Use:

Persons responded as to how likely they were to use tobacco products in the following situations:

- When I get angry about something or at someone
- When things are not going my way and I am frustrated

- When I need to be alert
- When I am deployed

Response options included (1) Extremely Unlikely, (2) Somewhat Unlikely, (3) Neither Likely or Unlikely, (4) Somewhat Likely, (5) Extremely Likely, and (6) Don't Use Tobacco.

Reasons for Tobacco Use: Persons who responded affirmatively (“Always,” “Usually,” or “Sometimes”) to one or more reasons below that people sometimes give for why they smoke cigarettes or use other tobacco products on a regular basis:

- To get a break from work
- To fit in with my military unit
- To help relieve stress (for example, work, ship, duty, deployment)
- To stay awake or alert
- To socialize
- To relieve boredom
- To avoid gaining weight
- For enjoyment

Response options included (1) Always, (2) Usually, (3) Sometimes, (4) Never, and (5) Never smoked or used tobacco products regularly.

2.7.5 *Stress Measures*

This survey included items geared toward characterizing stress felt by respondents. Topics covered include the following:

- Sources of stress
 - During the past 6 months, how much stress did you experience from each of the following?
 - Job frustrations
 - Marital/relationship problems
 - Deployment
 - Combat exposure
 - PCS
 - Problems with work relationships
 - Problems with supervisor
 - Concern about performance rating
 - Increases/decreases in workload
 - Conflicts between military and family responsibilities

- Working with civilian contractors
- Separation from family/friends
- Birth/adoption of a child
- Finding child care
- Death in the family
- Being far from home
- Money/housing problems
- Problems with one's health or family's health
- Behavior problems in children
- Unexpected events (flood, robbery, etc.)
- Separation from others in unit
- Behaviors for coping with stress
 - When you feel pressured, stressed, or anxious, how often do you engage in each of the following activities?
 - Talk to friends/family
 - Smoke a cigarette
 - Have a drink
 - Say a prayer
 - Exercise/play sports
 - Engage in a hobby
 - Eat
 - Use illegal drugs
 - Think of a plan to solve the problem
 - Think about hurting/killing myself
- Combat experiences
 - Thinking about all of your combat deployments, how many times have you had each of the following experiences?
 - Being sent outside the wire
 - Receiving incoming fire
 - Encountering mines, IEDs, booby traps, etc.
 - Working with landmines/unexploded ordnance
 - Unit firing on the enemy
 - Personally firing at the enemy
 - Engaging in hand-to-hand combat
 - Being responsible for the death/serious injury of an enemy
 - Witnessing members of unit or an ally being seriously wounded/killed
 - Unit suffering casualties
 - Seeing dead bodies or remains
 - Handling dead bodies or remains

- Someone I know well being killed in combat
- Taking care of injured/dying people
- Interacting with enemy prisoners of war
- Witnessing/engaging in acts violating the rules of engagement
- Being wounded in combat

These items were used to create a number of composite variables, described below.

Stress Level: Based on a sum score created for Item 46 on the survey,

- A lot = 3
- Some = 2
- A little = 1
- None at all = 0

Scores could range from 0 to 72. A total score of 0 to 10 was considered to indicate low stress, a score of 11 to 20 was categorized as moderate stress, and a sum score of greater than 20 was considered to indicate high stress.

Coping Style: The survey includes a question about the frequency with which respondents engaged in specific coping behaviors (six positive behaviors and four negative, as identified by factor analysis). The percentage of positive items endorsed as “frequently” was compared with the percentage of negative items endorsed as “frequently.” Participants were categorized by predominant type of coping behavior (either positive or negative); those with equal percentages of positive and negative behaviors endorsed as “frequently” were excluded.

Combat Exposure: Reports of exposure to specific combat or trauma experiences (e.g., being sent outside the wire, firing on the enemy, handling dead bodies or remains) were dichotomized. Respondents indicating that they had experienced the specified situation one or more times were assigned a “1” for the situation; those who had not experienced the situation were assigned a “0.” Item scores were summed for all combat/trauma experiences. Respondents scoring 0 to 1 were classified as having low combat exposure, those scoring 2 to 4 were classified as moderate combat exposure, those with sum scores 5 or greater were categorized as having high combat exposure.

2.7.6 Culture of Drinking

Definitions for analyses of the effects of culture on alcohol and tobacco use include measures of administrative and policy influences, perceived norms, drinking locations on and off base, and perceived availability and acceptability. Definitions for these different characteristics are described below.

Administrative and Policy Influences on Alcohol Use:

Administrative and policy influences affecting alcohol use included the amount of alcohol permitted in barracks, enforcement of the alcohol policies in the barracks, and limiting factors of alcohol use such as fear of military consequences and command influence. These measures were generally reported as simple percentages.

Perceived Drinking Norms: Perceived norms influencing alcohol use were based on responses regarding how much the respondent agreed with the following items:

- It is hard to fit in at this installation if I don’t drink.
- Drinking is part of being at this installation.
- Drinking is part of being in the military.
- Drinking is just about the only recreation available.
- At parties/social functions, everyone is encouraged to drink.
- At parties/social functions, nonalcoholic beverages are not always available.

Response options included “Strongly Agree,” “Agree,” “Disagree,” “Strongly Disagree,” and “Don’t Know/No Opinion.” Estimates appearing in tables represent the percentage of participants who answered “Agree” or “Strongly Agree” to each statement.

Location of Drinking: The survey asked how frequently respondents drank alcohol at the following locations on base:

- Barracks
- Enlisted club
- Officers’ club
- Other on-base club
- Recreational facility (e.g., bowling alley or golf course)
- On-base housing

Off-base drinking locations were the following:

- Off-base housing
- Bar
- Restaurant
- Hotel room
- Public location (e.g., park, beach, or parking lot)
- Recreational facility (e.g., bowling alley or golf course)

Response options for these items were “Always,” “Usually,” “Sometimes,” “Never,” and “Don’t Drink.” The estimates presented in tables represent the percentage of respondents who indicated that they “Usually” or “Always” drank in the location reported.

Perceived Availability and Acceptability of Tobacco

Use: Perceived availability and acceptability of tobacco was based on items indicating the degree to which respondents agreed with items regarding the availability of tobacco, friends’ use of tobacco products, and smoking being a part of the military. Response options to these items were “Strongly Agree,” “Agree,” “Disagree,” “Strongly Disagree,” and “Don’t Know/No Opinion.” Estimates in tables are the percentage of respondents who indicated that they “Agree” or “Strongly Agree” with the statement reported in the table.

2.7.7 Workplace Climate

Definitions for analyses of the effects of workplace climate and unit cohesion on alcohol use include measures of workplace climate (i.e., unit cohesion, job dissatisfaction, quality of work life, and satisfaction with one’s supervisor), unit type (i.e., combat, combat support, and combat service support), and unit deployment status (i.e., combat deployed, noncombat deployed, and not deployed). Definitions for these different characteristics are described below.

Horizontal Cohesion: Horizontal cohesion refers to the degree that a person perceives a sense of bonding among Service members. Items forming the unit cohesion scale asked personnel how true they felt each statement was:

- My unit is like a family to me.
- I am proud to be a member of the armed forces.

- I could go to someone in my unit for help if I had a personal problem.

Response options ranged from “Very True,” “Somewhat True,” “Neutral,” “Somewhat Untrue,” to “Very Untrue.” Each response option was assigned a value of 1 to 5, where 1 equals “Very Untrue” and 5 equals “Very True.” Data presented in the tables are mean scores reported by respondents.

Job Dissatisfaction: Job dissatisfaction items asked about the degree to which respondents felt the following items were accurate:

- I don’t have enough time to complete tasks.
- I feel that my talents or abilities are not being used.
- My responsibilities or hours have increased because of high operational tempo.

Respondents could indicate “Very Accurate,” “Somewhat Accurate,” “Neutral,” “Somewhat Inaccurate,” or “Very Inaccurate.” Each response option was assigned a value of 1 to 5, where 1 equals “Very Accurate” and 5 equals “Very Inaccurate.” Data presented in tables are mean scores reported by respondents for degree of work dissatisfaction.

Quality of Work Life: Quality of work life includes items that rate respondents’ satisfaction with

- their physical work environment,
- the number of people available to get work done, and
- qualifications of coworkers.

Response options were “Dissatisfied,” “Somewhat Dissatisfied,” “Neither Satisfied nor Dissatisfied,” “Somewhat Satisfied,” “Satisfied,” and “Not Applicable.” Response options were assigned a value of 1 to 5, where 1 equals “Dissatisfied” and 5 equals “Satisfied.” Values shown in tables represent the mean scores reported by participants.

Vertical Cohesion: Vertical cohesion consists of items that rate

- satisfaction with supervisor’s qualifications,
- satisfaction with leader’s abilities, and
- overall relationship with supervisor(s).

Response options were “Dissatisfied,” “Somewhat Dissatisfied,” “Neither Satisfied nor Dissatisfied,” “Somewhat Satisfied,” “Satisfied,” and “Not Applicable.” Response options were assigned a value of 1 to 5, where 1 equals “Dissatisfied” and 5

equals “Satisfied.” Values shown in tables represent the mean scores reported by participants.

2.8 References

Bray, R. M., Hourani, L. L., Rae Olmsted, K. L, Witt, M., Brown, J. M., Pemberton, M. R., et al. (2006). *2005 Department of Defense Survey of Health Related Behaviors Among Active Duty Military Personnel*. (RTI/7841/106-FR). Research Triangle Park, NC: Research Triangle Institute.

Chapter 3: Installation-Level Influences

Environmental factors at the installation level can be highly influential on alcohol and tobacco use behaviors. An environmental characteristic at the broadest level is region, that is, whether an installation is located within the continental United States (CONUS) or outside the continental United States (OCONUS). Installation-level influences also may include aspects of social situations. For example, civilian research suggests that heavy drinking is more likely to occur during evenings, weekends, or discount pricing “happy hours” (Single, 1993). Availability, promotion, and pricing of alcohol and tobacco are also important correlates of substance use behavior. Perceived availability of alcohol and tobacco and actual distance to retail outlets have been linked with increased use (Hawkins et al., 1992; Gruenewald, Remer, & Lipton, 2002), and these factors are expected to vary across CONUS and OCONUS installations. Finally, policy and/or administrative influences may vary across installations and Services, as each installation has a unique set of circumstances and priorities on which to focus.

This chapter examines installation-level influences on alcohol and tobacco use. It first reports findings for alcohol use, including Service and regional comparisons, problem drinking levels, negative effects of use, correlates of problem drinking, and negative effects and correlates of alcohol use and heavy alcohol consumption. This is followed by an examination of tobacco use that reports rates of use, nicotine dependence, social and environmental influences, and cigarette quit attempts and successes. The chapter then discusses the culture of alcohol and tobacco use, including consideration of administrative and policy influences on alcohol use, views about the acceptability of alcohol use, locations where drinking occurs on and off base, and perceptions about the availability and acceptability of tobacco use.

3.1 Alcohol Use

Alcohol abuse has been a long-standing problem in the military. The armed forces have experienced problems

with alcohol from the earliest days of military service, in part because heavy drinking has been an accepted custom and tradition (Bryant, 1979; Schuckit, 1977). In the past, alcohol was thought to be a necessary item for subsistence and morale and, as such, was provided as a daily ration to Sailors and Soldiers. Within the predominantly male U.S. military population, heavy drinking and being able to “hold one’s liquor” have served as tests “of suitability for the demanding masculine military role” (Bryant, 1974, p. 133). A common stereotype has been to characterize hard-fighting Soldiers as hard-drinking Soldiers. Alcoholic beverages have been available to military personnel at reduced prices at military outlets and, until recently, during “happy hours” on base (Bryant, 1974; Wertsch, 1991, p. 54). In addition, alcohol has been used in the military to reward hard work, to ease interpersonal tensions, and to promote unit cohesion and camaraderie (Ingraham, 1984). More recently, however, military policy has stressed the negative effects of alcohol abuse and has sought to foster responsible use (U.S. Department of Defense [DoD], 1972, 1980, 1983, 1985, 1994, 1997).

Alcohol misuse, including binge drinking and heavy drinking, is a key health behavior that has broad implications for fitness and performance. Since 1980, rates of heavy drinking among military personnel have shown little change after adjustments for demographic differences (15% to 20%). Recently, however, overall rates of heavy drinking increased significantly, from 15.4% in 1998 to 18.1% in 2002, and remained at that higher level (18.5%) in 2005 (Bray et al., 2003, 2006; Bray & Hourani, 2007). This increase is of concern because heavy alcohol use is associated with higher rates of alcohol-related problems, which can negatively affect individual health and overall military readiness. Such problems include lost productivity, alcohol dependence, driving under the influence of alcohol (DUI), decreased positive health practices, increased frequency of illness, and increased risk-taking behaviors (Bray et al., 1989, 2003, 2006; Marsden, Bray, & Herbold, 1988; Williams,

Bell, & Amoroso, 2002). Those who drink more heavily are at a higher risk for injury and decreased readiness, which affects a unit's ability to deploy (Williams, Bell, & Amoroso, 2002). These problems are costly for DoD, which, in 1995, spent approximately \$557 million in direct health care costs related to alcohol abuse; an additional estimated \$12.7 million was lost in productivity decreases resulting from alcohol abuse among active-duty personnel (DoD, 1997).

Regional differences have been reported in heavy alcohol use and alcohol-negative effects among U.S. military personnel stationed in different world regions, with personnel stationed in Asia being more likely to be heavy alcohol users (Bray et al., 2005). While the authors reported that productivity losses were greater in Asia, severe consequences and alcohol use per se were not. The authors speculated that regional culture, availability of alcohol, freedom from restraints, military culture, and response to stress might explain the observed differences. In addition, Navy personnel have reported that alcohol and opportunities for drinking are more easily available in foreign ports, where the minimum U.S. drinking age typically does not apply (Ames & Cunradi, 2004).

This section reports results on detailed analyses of alcohol use at the installation level. It examines comparisons of alcohol use for personnel stationed CONUS and OCONUS, correlates of heavy alcohol use, negative effects of alcohol use, and problem drinking. As described in Chapter 2, alcohol use has been defined as both average ounces of ethanol consumed by drinkers and levels of problem alcohol use using the Alcohol Use Disorders Identification Test (AUDIT). Heavy drinking is defined as consuming five or more drinks (four or more for females) on the same occasion at least once a week in the past 30 days, while binge drinking is defined as consuming five or more drinks (four or more for females) on at least one occasion during the past 30 days. Problem drinking levels using the AUDIT include hazardous drinking (score between 8 and 15), harmful drinking (score between 16 and 19), and possible dependence (score of 20 or higher). Negative effects include administrative action, productivity loss, and serious consequences.

3.1.1 Alcohol Use, by Service and Region

This section provides eight sets of estimates for each of the Services: (1) any alcohol use, (2) number of days drinking during the past 30 days for drinkers, (3) heavy alcohol use, (4) number of heavy drinking days during the past 30 days for heavy drinkers, (5) average daily ounces of ethanol consumed by drinkers, (6) largest number of drinks on one drinking occasion, (7) number of drinks to feel drunk, and (8) felt drunk two or more times in the past 30 days. It presents unadjusted estimates on these measures for each of the Services by both CONUS and OCONUS regions. These unadjusted estimates are descriptive only and yield no explanatory information about differences among Services. They do, however, reflect the within-Services differences at the sampled installations for average amount of alcohol consumed by drinkers, the prevalence of heavy alcohol use, and feeling drunk for each of the Services, by region.

Table 3.1.1 indicates that more than 75% of all personnel acknowledged past-month alcohol use. Comparisons of any past-month alcohol use show that rates were lowest among Army and Air Force personnel (76.6% and 77.0%, respectively) and highest among Marine Corps personnel (83.8%). For all Services except the Marine Corps, OCONUS past-month alcohol use rates were significantly higher than those for CONUS personnel. The total number of drinking days, among drinkers, during the past month was lowest for Air Force personnel (7.8 days) compared with the other Services, and there were no significant differences based on region. Heavy alcohol use rates were also lowest for the Air Force (20.7%) and highest for the Marine Corps (40.5%). Both Army and Air Force personnel indicated higher rates of heavy alcohol use for OCONUS personnel (35.8% and 24.7%, respectively) than for CONUS personnel (28.8% and 17.1%, respectively).

With respect to average daily ounces of ethanol consumed by drinkers, only the Navy showed significantly lower rates for OCONUS compared with CONUS personnel (3.7 daily ounces vs. 4.3 daily ounces), while the Army showed significantly higher rates for OCONUS compared with CONUS personnel

Table 3.1.1

Estimates of Alcohol Use, Past 30 Days, by Service and Region

Service/Region	Alcohol Measure							
	Any Alcohol Use	Days Drinking	Heavy Alcohol Use	Days Heavy Drinking	Average Daily Ounces Ethanol	Largest Number of Drinks	Number of Drinks to Feel Drunk	Felt Drunk 2 or More Times
Army								
CONUS ^a	76.0 (1.7) ²	9.2 (0.3)	28.8 (1.9) ²	14.3 (0.3)	5.0 (0.2) ²	9.2 (0.3) ²	7.5 (0.2)	45.2 (2.0) ²
OCONUS ^b	82.0 (0.8) ¹	9.9 (0.3)	35.8 (1.4) ¹	13.7 (0.4)	5.8 (0.2) ¹	10.3 (0.3) ¹	7.9 (0.2)	55.0 (1.5) ¹
Total	76.6 (1.5)	9.3 (0.3)	29.5 (1.7)	14.2 (0.3)	5.1 (0.2)	9.3 (0.3)	7.5 (0.2)	46.3 (1.8)
Navy								
CONUS	76.8 (0.9) ⁵	8.6 (0.2)	25.3 (1.4)	12.9 (0.4)	4.3 (0.2) ⁵	8.3 (0.3) ⁵	7.1 (0.2)	43.7 (1.4)
OCONUS	81.9 (0.8) ⁴	9.0 (0.2)	23.4 (1.0)	13.4 (0.3)	3.7 (0.2) ⁴	7.5 (0.2) ⁴	6.7 (0.2)	42.0 (1.2)
Total	79.7 (0.7)	8.8 (0.1)	24.2 (0.8)	13.2 (0.2)	3.9 (0.1)	7.8 (0.2)	6.9 (0.1)	42.7 (0.9)
Marine Corps								
CONUS	83.3 (1.3)	10.5 (0.3)	41.2 (1.8)	14.1 (0.3)	5.9 (0.2)	11.4 (0.3)	7.9 (0.2) ⁸	59.8 (1.9)
OCONUS	84.4 (0.8)	10.1 (0.3)	39.9 (1.4)	14.0 (0.3)	6.2 (0.2)	11.9 (0.3)	8.5 (0.2) ⁷	60.0 (1.3)
Total	83.8 (0.7)	10.3 (0.2)	40.5 (1.2)	14.1 (0.2)	6.0 (0.1)	11.7 (0.2)	8.2 (0.1)	59.9 (1.2)
Air Force								
CONUS	74.2 (1.4) ¹¹	7.9 (0.2)	17.1 (1.3) ¹¹	12.0 (0.5)	3.1 (0.2)	6.3 (0.2) ¹¹	6.0 (0.2)	35.8 (1.5) ¹¹
OCONUS	80.0 (1.3) ¹⁰	7.7 (0.3)	24.7 (2.1) ¹⁰	11.1 (0.4)	3.5 (0.2)	7.4 (0.3) ¹⁰	6.4 (0.2)	44.9 (1.9) ¹⁰
Total	77.0 (1.0)	7.8 (0.2)	20.7 (1.2)	11.5 (0.3)	3.3 (0.1)	6.9 (0.2)	6.2 (0.1)	40.1 (1.2)
All Services								
CONUS	76.7 (1.2) ¹⁴	9.2 (0.2)	28.4 (1.3)	14.0 (0.2) ¹⁴	4.8 (0.1)	9.0 (0.2)	7.4 (0.1)	45.5 (1.4) ¹⁴
OCONUS	82.1 (0.5) ¹³	9.1 (0.2)	31.2 (0.9)	13.1 (0.2) ¹³	4.8 (0.1)	9.4 (0.2)	7.5 (0.1)	50.9 (0.9) ¹³
Total	78.3 (0.8)	9.2 (0.2)	29.2 (1.0)	13.7 (0.2)	4.8 (0.1)	9.1 (0.2)	7.4 (0.1)	47.1 (1.0)

Note: Table entries for average daily ounces of ethanol, days drinking, days heavy drinking, largest number of drinks, and number of drinks to feel drunk are average values among military personnel by Service and region. Table entries for any alcohol use, heavy alcohol use, and felt drunk two or more times in the past 30 days are percentages among military personnel by Service and region. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of alcohol use are given in Section 2.7.3.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Days Drinking, Q24, Q28, and Q31; Days Heavy Drinking, Q24–Q35; Average Daily Ounces of Ethanol, Q24–Q35; Largest Number of Drinks, Q36; Number of Drinks to Feel Drunk, Q38; Heavy Alcohol Use, Q24–Q35; Drunk Two or More Times in Past Month, Q37).

(5.8 daily ounces vs. 5.0 daily ounces). There were no regional differences in average daily ounces of ethanol for Marine Corps and Air Force personnel. OCONUS Marine Corps personnel showed the largest number of drinks consumed during one drinking occasion (11.9 drinks), while CONUS Air Force personnel showed the lowest (6.3 drinks). A significantly larger number of drinks per drinking occasion were reported by OCONUS Army and Air Force personnel (10.3 drinks and 7.4 drinks, respectively) compared with CONUS Army and Air Force personnel (9.2 drinks and 6.3 drinks, respectively), while the Navy indicated a significantly smaller number of drinks for OCONUS personnel (7.5 drinks) compared with CONUS Navy personnel (8.3 drinks).

Feeling drunk two or more times during the past month was reported by 40% of Air Force personnel, 43% of Navy personnel, 46% of Army personnel, and nearly 60% of Marine Corps personnel. OCONUS rates for feeling drunk were higher than CONUS rates among Army and Air Force personnel. The reported number of drinks to feel drunk was highest for OCONUS Marine Corps personnel (8.2 drinks) and lowest among CONUS Air Force personnel (6.0 drinks).

3.1.2 Problem Drinking Levels, by Service and Region

The measure of problem drinking levels and possible alcohol dependence was determined using the AUDIT. The AUDIT was developed by the World Health Organization (WHO) as a simple method of screening for excessive drinking and to assist in brief assessment. The AUDIT consists of 10 questions, each scored from 0 to 4, with a total score ranging from 0 to 40. Scores between 8 and 15 are indicative of hazardous drinking, scores between 16 and 19 suggest harmful drinking, and scores of 20 or above clearly warrant further diagnostic evaluation for alcohol dependence.

Table 3.1.2 shows that, for the Army, 5.5% of personnel were possibly alcohol dependent, with 24.0% drinking at hazardous levels, 5.9% drinking at harmful levels, and 35.4% drinking at or above hazardous levels (i.e., AUDIT score greater than or equal to 8). Hazardous

drinking levels and possible alcohol dependence rates were higher for OCONUS (30.2% and 8.0%, respectively) than for CONUS (23.3% and 5.2%, respectively) rates in the Army.

Navy personnel showed a 4.0% possible dependence rate, and 24.9% of personnel drinking at hazardous levels. The rate of harmful drinking was 3.9%, with 32.7% drinking at or above hazardous levels. There were no significant differences by region in hazardous or harmful drinking rates; however, possible dependence rates were higher for CONUS Navy personnel (5.1%) compared with OCONUS Navy personnel (3.2%).

The Marine Corps showed a 33.4% rate of hazardous drinking, 7.9% rate for harmful drinking, and 9.2% rate for possible alcohol dependence. There were no regional differences on any of the problem drinking categories for the Marine Corps. The rate of hazardous drinking or above was 50.5% overall in the Marine Corps.

Air Force personnel reported the lowest rates of hazardous drinking (21.1%), harmful drinking (2.9%), and possible alcohol dependence (1.7%) among the four Service branches. The Air Force showed that 25.6% were drinking at or above hazardous levels. Rates for hazardous and harmful drinking levels were higher for OCONUS Air Force personnel (23.6% and 3.5%, respectively) when compared with OCONUS Air Force personnel (18.8% and 2.3%, respectively).

3.1.3 Negative Effects of Alcohol Use, by Service and Region

This section examines the negative effects of alcohol consumption on military personnel. These negative effects include administrative action (i.e., letter of counseling, letter of reprimand, Article 15, Page 13), productivity loss (i.e., being late to work, leaving work early, getting injured at work, working below normal level of performance, being drunk at work, or being called in during off-duty hours and reporting to work feeling drunk), and serious consequences (i.e., experiencing three or more consequences such as drunken driving arrest, physical fights, feeling sick after drinking, relationship problems, neglecting obligations,

Table 3.1.2 Problem Drinking Levels, by Service and Region

Service/Region	Problem Drinking Levels			Hazardous Level or Above ^d
	Hazardous Drinking ^a	Harmful Drinking ^b	Possible Dependence ^c	
Army				
CONUS ^e	23.3 (1.1) ²	5.8 (0.8)	5.2 (0.7) ²	34.3 (2.0) ²
OCONUS ^f	30.2 (1.2) ¹	6.7 (0.5)	8.0 (0.7) ¹	44.8 (1.6) ¹
Total	24.0 (1.0)	5.9 (0.7)	5.5 (0.6)	35.4 (1.8)
Navy				
CONUS	25.0 (1.1)	4.3 (0.6)	5.1 (0.4) ⁵	34.4 (1.6)
OCONUS	24.7 (1.4)	3.6 (0.3)	3.2 (0.3) ⁴	31.5 (1.4)
Total	24.9 (0.9)	3.9 (0.3)	4.0 (0.3)	32.7 (1.1)
Marine Corps				
CONUS	32.1 (1.1)	8.4 (0.8)	9.5 (0.8)	50.1 (1.7)
OCONUS	34.6 (0.8)	7.4 (0.3)	8.9 (0.6)	50.8 (1.4)
Total	33.4 (0.7)	7.9 (0.5)	9.2 (0.5)	50.5 (1.1)
Air Force				
CONUS	18.8 (1.1) ¹¹	2.3 (0.3) ¹¹	1.4 (0.3)	22.5 (1.2) ¹¹
OCONUS	23.6 (1.6) ¹⁰	3.5 (0.5) ¹⁰	2.0 (0.2)	29.1 (1.8) ¹⁰
Total	21.1 (1.0)	2.9 (0.3)	1.7 (0.2)	25.6 (1.1)
All Services				
CONUS	23.8 (0.8) ¹⁴	5.5 (0.5)	5.2 (0.5)	34.5 (1.4) ¹⁴
OCONUS	28.4 (0.6) ¹³	5.3 (0.2)	5.5 (0.3)	39.2 (0.9) ¹³
Total	25.2 (0.6)	5.4 (0.4)	5.3 (0.3)	35.9 (1.0)

Note: Table displays the percentage of military personnel by Service and region at each problem drinking level. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level.

^aDefined as an Alcohol Use Disorder Identification Test (AUDIT) score 8–15.

^bDefined as an Alcohol Use Disorder Identification Test (AUDIT) score 16–19.

^cDefined as an Alcohol Use Disorder Identification Test (AUDIT) score ≥ 20.

^dDefined as an Alcohol Use Disorder Identification Test (AUDIT) score ≥ 8.

^eRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^fRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Problem Drinking Levels, Q20–Q23).

drinking and driving, and unwanted sexual situations). Results are shown in Table 3.1.3.

Marine Corps personnel showed the highest rates of administrative action (12.2%), productivity loss (17.5%), and serious consequences (17.7%). A larger percentage of CONUS Marine Corps personnel (19.3%) reported experiencing three or more serious consequences when compared with OCONUS Marine Corps personnel (16.1%).

The rates for all three negative effects were lowest in the Air Force, with 7.4% reporting having had

administrative action taken against them, 11.0% experiencing productivity loss, and 6.3% having experienced three or more serious consequences. For Air Force personnel, a larger percentage of OCONUS personnel (8.7%) reported having had administrative action taken than CONUS personnel (6.2%).

Army and Navy rates for negative effects were similar to each other, with 8.4% and 8.5% reporting administrative action, 16.3% and 14.5% indicating productivity loss, and 13.8% and 12.3% indicating experiencing three or more serious consequences. However, OCONUS Army personnel (16.3%) had a higher rate of experiencing

Table 3.1.3 Negative Effects of Alcohol Use, by Service and Region

Service/Region	Negative Effects		
	Administrative Action	Productivity Loss	Serious Consequences
Army			
CONUS ^a	8.0 (0.8) ²	16.1 (1.1)	13.5 (1.1) ²
OCONUS ^b	11.4 (0.6) ¹	17.2 (0.7)	16.3 (0.8) ¹
Total	8.4 (0.8)	16.3 (1.0)	13.8 (1.0)
Navy			
CONUS	7.8 (0.6)	14.8 (1.0)	14.5 (0.8) ⁵
OCONUS	8.9 (0.6)	14.4 (0.5)	10.7 (0.8) ⁴
Total	8.5 (0.4)	14.5 (0.5)	12.3 (0.6)
Marine Corps			
CONUS	12.7 (0.7)	18.1 (1.1)	19.3 (0.9) ⁸
OCONUS	11.6 (0.4)	17.0 (0.5)	16.1 (0.7) ⁷
Total	12.2 (0.4)	17.5 (0.6)	17.7 (0.6)
Air Force			
CONUS	6.2 (0.7) ¹¹	11.4 (0.8)	6.4 (0.9)
OCONUS	8.7 (0.5) ¹⁰	10.6 (1.1)	6.1 (0.5)
Total	7.4 (0.5)	11.0 (0.7)	6.3 (0.5)
All Services			
CONUS	8.3 (0.6) ¹⁴	15.6 (0.8)	13.2 (0.8)
OCONUS	10.1 (0.3) ¹³	14.5 (0.5)	12.0 (0.4)
Total	8.9 (0.4)	15.3 (0.6)	12.9 (0.6)

Note: Table displays the percentage of military personnel by Service and region who reported negative effects of alcohol use. The time period for administrative action is entire military career; for productivity loss and serious consequences, the time period is the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of negative effects of alcohol use are given in Section 2.7.3.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Administrative Action, Q42; Productivity Loss, Q44; Serious Consequences of Alcohol Use, Q43a-i).

serious consequences when compared with CONUS Army personnel (13.5%), while Navy personnel had a higher rate among CONUS personnel (14.5%) than among OCONUS personnel (10.7%).

3.1.4 Correlates of Problem Drinking Levels and Negative Effects of Alcohol Use

Past research on military personnel has established that alcohol use patterns differ among certain sociodemographic groups (Bray et al., 2003; Williams, Bell, & Amoroso, 2002). For example, problem drinking levels tend to be higher among younger persons, males, and less educated persons, and these same groups experience more negative consequences as a result of their drinking. Related to those findings, binge drinking rates also have been shown to be higher among younger

persons. Knowledge of these correlates of problem drinking can be helpful in specifying high-risk populations to target for brief interventions. This section examines the correlates of problem drinking, binge drinking, and negative consequences.

3.1.4.1 Correlates of Problem Drinking

Table 3.1.4 shows the rates for drinking at or above hazardous levels for each Service branch by region (CONUS/OCONUS) and sociodemographic characteristics. Across all Services, problem drinking rates are higher among males than among females. Both the Army and the Air Force showed higher problem drinking rates for OCONUS male personnel (47.2% and 31.0%, respectively) compared with CONUS male personnel (36.5% and 24.9%, respectively), while only

Table 3.1.4

Problem Drinking,^a Past 30 Days, by Sociodemographic Characteristic, Service, and Region

Sociodemographic Characteristics	Service/Region								All Services	
	Army		Navy		Marine Corps		Air Force			
	CONUS ^b	OCONUS ^c	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS
Gender										
Male	36.5 (1.9) ²	47.3 (1.8) ¹	37.6 (1.6)	33.7 (1.2)	52.4 (1.6)	54.2 (1.5)	24.9 (1.5) ⁸	31.0 (1.9) ⁷	37.0 (1.4)	38.6 (1.1)
Female	15.5 (3.8) ²	31.6 (3.3) ¹	21.6 (1.8)	19.5 (2.7)	33.3 (3.4)	23.8 (4.0)	13.4 (2.0)	19.0 (3.3)	17.5 (2.3)	22.5 (1.9)
Race/Ethnicity										
White, non-Hispanic	38.1 (2.4) ²	50.2 (2.2) ¹	40.3 (1.5)	36.4 (1.4)	53.7 (1.8)	56.5 (1.8)	22.0 (1.5) ⁸	29.3 (1.8) ⁷	37.6 (1.7)	38.4 (1.4)
African American, non-Hispanic	23.7 (2.5) ²	35.5 (2.9) ¹	24.7 (1.8)	22.0 (2.5)	35.8 (4.8)	41.0 (4.5)	11.6 (1.3) ⁸	20.3 (2.7) ⁷	22.9 (1.8) ¹⁰	27.7 (1.5) ⁹
Hispanic	31.4 (2.9) ²	46.2 (2.6) ¹	38.1 (2.9)	33.1 (2.7)	48.4 (2.7)	45.0 (2.6)	34.3 (3.3)	35.8 (4.3)	35.5 (2.0)	39.7 (1.6)
Other	36.4 (3.7)	39.6 (3.3)	19.8 (3.1)	20.7 (1.9)	45.3 (4.1)	46.5 (3.3)	32.3 (4.6)	33.3 (3.0)	35.6 (2.8)	32.1 (1.5)
Education										
High school or less	41.3 (2.3) ²	57.6 (1.4) ¹	37.9 (1.9)	40.0 (1.8)	54.0 (2.1)	56.7 (2.9)	30.5 (2.9)	36.7 (2.0)	42.6 (1.7) ¹⁰	47.6 (1.3) ⁹
Some college	28.2 (2.2) ²	39.4 (1.9) ¹	32.9 (1.7)	29.7 (1.7)	47.0 (1.8)	50.4 (0.9)	20.7 (1.6) ⁸	29.7 (2.2) ⁷	28.8 (1.5) ¹⁰	33.5 (1.2) ⁹
College graduate	18.8 (2.5) ²	26.8 (2.5) ¹	28.2 (3.4) ⁴	18.0 (2.0) ³	31.1 (4.3)	31.4 (2.0)	20.6 (1.6)	17.1 (1.7)	21.0 (1.4)	21.0 (1.2)
Family Status										
Not married	43.4 (2.5) ²	52.5 (1.1) ¹	40.4 (1.8)	39.5 (2.1)	56.6 (2.2)	60.1 (2.6)	29.4 (1.6) ⁸	41.0 (2.3) ⁷	43.6 (1.7)	46.4 (1.1)
Married, spouse not present	32.8 (3.9) ²	45.6 (2.9) ¹	34.2 (2.7)	33.8 (4.1)	49.2 (4.5)	55.6 (4.2)	22.8 (3.4) ⁸	33.2 (2.5) ⁷	34.2 (3.0)	38.3 (1.6)
Married, spouse present	26.9 (1.9)	31.6 (2.4)	26.7 (1.3) ⁴	22.7 (1.1) ³	38.9 (1.6)	39.6 (1.9)	17.8 (1.4)	15.9 (1.7)	26.4 (1.3)	23.6 (1.0)
Pay Grade										
E1–E3	38.5 (2.7) ²	61.4 (1.9) ¹	45.5 (1.6)	45.4 (3.7)	51.3 (1.8) ⁶	57.8 (2.5) ⁵	28.2 (2.3) ⁸	35.9 (2.3) ⁷	41.1 (1.6) ¹⁰	51.0 (1.7) ⁹
E4–E6	36.0 (2.2)	41.7 (2.1)	29.7 (1.6)	31.4 (1.7)	53.0 (2.1)	56.7 (1.1)	22.5 (1.6) ⁸	31.7 (2.1) ⁷	35.6 (1.7)	36.2 (1.2)
E7–E9	17.9 (3.0)	17.7 (4.8)	26.2 (3.6)	19.3 (2.8)	17.0 (4.4)	23.2 (2.0)	14.0 (2.4)	13.1 (1.8)	17.4 (2.1)	16.6 (1.5)
W1–W5, O1–O10	19.4 (2.1)	25.6 (3.8)	28.1 (2.4) ⁴	18.8 (2.8) ³	35.7 (4.6)	27.6 (3.0)	23.3 (2.0)	18.7 (2.3)	22.7 (1.4)	21.5 (1.6)
Total	34.3 (2.0) ²	44.8 (1.6) ¹	34.4 (1.6)	31.5 (1.4)	50.1 (1.7)	50.8 (1.4)	22.5 (1.2) ⁸	29.1 (1.8) ⁷	34.5 (1.4) ¹⁰	39.2 (0.9) ⁹

Note: Table displays the percentage of military personnel by sociodemographic characteristic, Service, and region who reported problem drinking in the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of sociodemographic characteristics are given in 2.7.1.

^aDefined as Alcohol Use Disorder Identification Test (AUDIT) score ≥ 8 .

^bRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^cRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Problem Drinking Levels, Q20–Q23).

Army women reported significantly higher rates for problem drinking compared with OCONUS female personnel. The rate of problem drinking among Army women doubled from 15.5% to 31.6% when comparing CONUS to OCONUS personnel.

White, non-Hispanic males in OCONUS Marine Corps and Army locations reported the highest rates of problem drinking, 56.5% and 50.2%, respectively. All racial/ethnic groups in the Army reported significantly higher OCONUS rates than CONUS rates.

Across all Services, problem drinking levels were highest among less educated personnel, particularly for OCONUS personnel. As with gender comparisons, rates were highest among OCONUS Army and Marine Corps personnel with a high school education or less (57.6% and 56.7%, respectively). Unmarried Marine Corps personnel indicated the highest rates for problem drinking, with 60.1% of OCONUS personnel and 56.6% of CONUS personnel acknowledging hazardous or above drinking levels. Problem drinking rates were lowest among OCONUS Air Force personnel with a spouse present (15.9%).

With respect to pay grade, lower-ranking (i.e., E1 through E3) OCONUS Army personnel had the highest rate of problem drinking (61.4%), while the lowest rate was found among E7 through E9 OCONUS Air Force personnel (13.1%).

3.1.4.2 *Correlates of Binge Drinking*

Table 3.1.5 shows the prevalence of binge drinking by sociodemographic characteristic, Service, and region. Overall, OCONUS males had a higher prevalence of binge drinking than OCONUS females (53.2% vs. 31.5%). Among Army personnel, OCONUS males and females (61.0% and 42.1%, respectively) had higher rates than CONUS males and females (53.5% and 25.1%, respectively), and among Air Force personnel, only males had higher rates in the OCONUS region (47.2%) compared with the CONUS region (39.1%). For the Marine Corps, CONUS females (43.2%) had higher rates of binge drinking than OCONUS females (32.3%).

Overall, OCONUS Hispanics had the highest rates of binge drinking (57.0%), but when examining specific Services, White, non-Hispanic personnel in the Marine Corps had very high rates of binge drinking regardless of whether they were stationed inside or outside the continental United States (67.1% and 67.4%).

As with problem drinking levels, binge drinking rates were higher among less educated, single, lower-ranking personnel from all Service branches. There were few differences in binge drinking rates by region. However, Navy personnel consistently showed higher rates for CONUS personnel as compared with OCONUS personnel, particularly when examining gender and racial/ethnic differences. Unmarried Marine Corps personnel who were at OCONUS bases had the highest overall rates for binge drinking (73.6%).

3.1.4.3 *Correlates of Productivity Loss*

Table 3.1.6 shows the prevalence of productivity loss by selected sociodemographic characteristics. Productivity loss among Marine Corps personnel who were married but did not have a spouse present in OCONUS regions (29.4%) and among personnel reporting their race/ethnicity as “Other” in the Marine Corps for both CONUS (25.2%) and OCONUS (25.7%) were highest overall. Army personnel also reported similar rates for productivity loss, but did not show regional differences. Across most Service branches and sociodemographic groups, there were no CONUS/OCONUS differences in productivity loss. Among Navy personnel, OCONUS Hispanic personnel (19.9%) showed significantly higher rates of productivity loss than CONUS Hispanic personnel (10.6%), and CONUS officers (i.e., W1 through W5, O1 through O6) showed the highest rates of any Navy personnel, with 21.5% reporting productivity loss. Air Force personnel reported the lowest rates of productivity loss.

3.1.4.4 *Correlates of Serious Consequences*

Table 3.1.7 shows the prevalence of serious consequences by selected sociodemographic characteristics. For Army personnel, the OCONUS prevalence rate for experiencing serious consequences was generally higher than CONUS rates. In examining

Table 3.1.5

Binge Drinking,^a Past 30 Days, by Sociodemographic Characteristic, Service, and Region

Sociodemographic Characteristics	Service/Region								All Services	
	Army		Navy		Marine Corps		Air Force			
	CONUS ^b	OCONUS ^c	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS
Gender										
Male	53.5 (2.2) ²	61.0 (1.8) ¹	51.2 (1.6)	47.8 (1.2)	66.2 (1.4)	66.2 (1.6)	39.1 (2.0) ⁸	47.2 (1.7) ⁷	53.1 (1.5)	53.2 (0.9)
Female	25.1 (4.3) ²	42.1 (3.9) ¹	30.5 (2.3)	29.8 (3.3)	43.2 (2.9) ⁶	32.3 (3.0) ⁵	21.8 (2.2)	26.5 (2.2)	26.7 (2.6)	31.5 (1.7)
Race/Ethnicity										
White, non-Hispanic	53.1 (2.6) ²	61.7 (1.9) ¹	50.4 (1.6)	49.1 (1.4)	67.1 (1.6)	67.4 (1.3)	35.9 (2.0) ⁸	43.3 (1.9) ⁷	51.9 (1.8)	51.3 (1.3)
African American, non-Hispanic	43.4 (3.6)	52.1 (3.1)	34.6 (2.3)	33.3 (2.4)	50.0 (3.9)	48.8 (3.8)	20.6 (1.8) ⁸	32.5 (2.5) ⁷	40.1 (2.6)	40.9 (1.6)
Hispanic	48.5 (3.2) ²	60.9 (2.9) ¹	55.0 (2.1)	49.8 (2.9)	63.7 (2.6)	61.4 (2.7)	48.8 (3.5)	56.9 (3.0)	51.9 (2.1)	57.0 (1.5)
Other	51.4 (3.9)	51.5 (2.9)	42.6 (4.4)	37.7 (3.0)	49.7 (3.6)	59.4 (4.6)	44.0 (3.6)	46.2 (3.7)	49.7 (2.9)	46.0 (1.7)
Education										
High school or less	57.0 (2.6) ²	69.1 (1.5) ¹	50.6 (2.1) ⁴	56.6 (1.4) ³	66.4 (1.8)	70.5 (2.1)	45.9 (3.0)	52.7 (2.1)	57.6 (1.9) ¹⁰	61.9 (1.1) ⁹
Some college	45.1 (2.6) ²	54.5 (1.8) ¹	45.5 (1.6)	42.5 (1.5)	62.1 (2.1)	61.0 (1.7)	34.6 (1.9) ⁸	44.7 (2.4) ⁷	44.8 (1.8)	47.7 (1.2)
College graduate	33.0 (3.6)	38.4 (4.0)	36.5 (4.3)	25.7 (3.5)	44.8 (3.7)	37.3 (1.6)	29.8 (2.5)	26.9 (2.2)	33.0 (2.0)	30.4 (1.6)
Family Status										
Not married	60.0 (2.8) ²	66.2 (1.2) ¹	53.7 (1.8)	54.1 (1.8)	69.0 (1.7) ⁶	73.6 (1.5) ⁵	44.4 (1.2) ⁸	55.4 (1.4) ⁷	59.0 (1.8)	60.5 (0.8)
Married, spouse not present	49.9 (4.0)	59.3 (3.8)	46.3 (3.6)	49.7 (3.0)	59.3 (4.4)	63.1 (4.2)	39.2 (5.5)	48.3 (3.2)	50.1 (3.1)	52.7 (1.8)
Married, spouse present	42.4 (2.4)	43.9 (2.3)	37.8 (1.4)	34.3 (1.4)	54.6 (1.6)	49.4 (2.2)	29.2 (1.9)	30.5 (2.1)	40.9 (1.7) ¹⁰	36.3 (1.1) ⁹
Pay Grade										
E1–E3	51.6 (2.3) ²	72.9 (1.4) ¹	56.4 (2.0)	60.2 (4.1)	64.0 (1.6) ⁶	71.2 (3.1) ⁵	40.0 (2.6)	46.7 (2.2)	53.8 (1.4) ¹⁰	63.2 (1.5) ⁹
E4–E6	53.5 (2.5)	56.5 (1.6)	43.3 (1.6)	46.4 (1.6)	66.5 (1.6)	67.6 (1.3)	37.2 (1.8) ⁸	47.4 (2.2) ⁷	52.2 (1.9)	51.1 (1.1)
E7–E9	34.1 (3.9)	35.2 (5.4)	36.9 (2.5) ⁴	27.8 (3.4) ³	35.6 (5.6)	39.0 (1.1)	25.1 (2.7)	28.1 (2.1)	32.2 (2.7)	30.4 (1.7)
W1–W5, O1–O10	27.0 (3.4)	31.6 (4.5)	34.7 (3.2) ⁴	19.6 (3.5) ³	51.0 (4.7) ⁶	34.3 (1.1) ⁵	33.4 (3.4)	30.1 (3.9)	32.1 (2.2)	29.0 (2.2)
Total	50.2 (2.4) ²	58.2 (1.7) ¹	46.8 (1.7)	44.9 (1.5)	63.5 (1.5)	63.6 (1.5)	35.3 (1.6) ⁸	43.5 (1.7) ⁷	49.5 (1.6)	52.7 (0.9)

Note: Table displays the percentage of military personnel by sociodemographic characteristic, Service, and region who reported binge drinking in the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of sociodemographic characteristics are given in Section 2.7.1.

^aDefined as having consumed five or more drinks (four for females) on the same occasion at least once during the past 30 days.

^bRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^cRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Binge Drinking, Q22a).

Table 3.1.6 Productivity Loss, Past 30 Days, by Sociodemographic Characteristic, Service, and Region

Sociodemographic Characteristics	Service/Region								All Services	
	Army		Navy		Marine Corps		Air Force			
	CONUS ^a	OCONUS ^b	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS
Gender										
Male	16.5 (1.1)	17.3 (0.8)	13.8 (1.0)	13.5 (0.6)	18.3 (1.3)	18.1 (1.3)	11.0 (1.0)	10.1 (1.4)	15.8 (0.8) ¹⁰	13.7 (0.6) ⁹
Female	13.3 (2.5)	16.8 (1.9)	18.2 (1.6)	19.0 (1.1)	18.2 (2.1)	13.7 (1.2)	13.4 (2.8)	11.4 (1.8)	14.3 (1.6)	14.6 (1.0)
Race/Ethnicity										
White, non-Hispanic	15.7 (1.3)	17.2 (1.1)	15.0 (1.4)	13.7 (0.7)	17.5 (1.0)	16.9 (1.5)	10.9 (0.7)	9.6 (1.5)	15.1 (0.9)	12.9 (0.8)
African American, non-Hispanic	18.0 (2.3)	16.9 (1.9)	18.5 (1.7) ⁴	12.6 (0.8) ³	20.3 (2.4)	17.1 (3.8)	12.8 (2.0)	13.3 (1.7)	17.5 (1.7)	14.7 (0.9)
Hispanic	16.4 (2.1)	16.8 (2.1)	10.6 (1.4) ⁴	19.9 (2.0) ³	17.3 (1.9)	15.7 (2.1)	11.1 (1.7)	12.9 (1.8)	15.6 (1.4)	16.3 (1.0)
Other	15.6 (2.7)	18.7 (2.3)	9.6 (1.5)	12.0 (1.2)	25.2 (3.1)	25.7 (2.5)	12.0 (2.1)	9.9 (2.2)	15.8 (2.0)	14.5 (1.1)
Education										
High school or less	18.6 (1.3)	20.8 (1.2)	14.3 (1.3)	12.2 (0.8)	18.4 (1.7)	20.9 (1.7)	13.8 (1.9)	11.8 (1.6)	18.1 (1.0)	16.3 (0.7)
Some college	14.8 (1.5)	16.8 (0.9)	15.7 (1.4)	17.0 (0.8)	18.4 (1.3)	15.8 (0.8)	11.0 (1.3)	10.0 (1.0)	14.5 (1.0)	13.6 (0.6)
College graduate	9.7 (2.6)	8.5 (1.5)	12.3 (2.2)	8.4 (0.9)	14.7 (3.3)	9.2 (1.2)	10.1 (1.2)	8.8 (2.1)	10.4 (1.4)	8.7 (1.0)
Family Status										
Not married	18.3 (1.3)	18.8 (1.1)	17.0 (1.3)	16.9 (1.0)	18.2 (1.4)	18.2 (1.2)	14.0 (1.0)	12.4 (1.6)	17.6 (0.8)	16.0 (0.7)
Married, spouse not present	18.4 (3.8)	15.4 (2.1)	12.8 (1.7)	14.1 (1.9)	16.3 (3.5) ⁶	29.4 (3.9) ⁵	12.0 (4.5)	8.1 (1.1)	17.4 (2.9)	12.4 (1.0)
Married, spouse present	14.1 (1.2)	15.3 (1.8)	12.4 (1.0)	11.6 (1.1)	18.5 (1.4)	14.9 (1.3)	9.5 (1.1)	9.3 (1.5)	13.6 (0.9)	11.7 (0.8)
Pay Grade										
E1–E3	18.4 (1.9)	20.8 (1.3)	14.8 (1.9)	14.3 (1.3)	16.2 (1.5)	20.1 (1.5)	11.9 (2.0)	16.0 (2.9)	16.9 (1.2)	18.2 (1.0)
E4–E6	16.8 (1.2)	17.9 (1.2)	14.7 (0.9)	15.8 (0.5)	21.0 (1.8)	18.0 (1.1)	12.4 (1.3)	9.7 (1.3)	16.6 (0.9) ¹⁰	13.9 (0.7) ⁹
E7–E9	5.8 (1.8)	6.7 (2.7)	9.8 (2.7)	8.6 (1.7)	8.8 (4.0)	12.9 (2.7)	7.0 (1.2)	7.8 (2.6)	6.4 (1.3)	8.3 (1.3)
W1–W5, O1–O10	14.0 (3.9)	8.2 (2.3)	21.5 (5.7) ⁴	8.6 (1.7) ³	15.0 (3.3)	9.7 (1.6)	10.8 (1.3)	9.4 (2.4)	13.0 (2.0)	9.0 (1.2)
Total	16.1 (1.1)	17.2 (0.7)	14.8 (1.0)	14.4 (0.5)	18.1 (1.1)	17.0 (0.5)	11.4 (0.8)	10.6 (1.1)	15.6 (0.8)	14.5 (0.5)

Note: Table displays the percentage of military personnel by sociodemographic characteristic, Service, and region who reported productivity loss in the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of sociodemographic characteristics and productivity loss are given in Sections 2.7.1 and 2.7.3, respectively.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Productivity Loss, Q44).

Table 3.1.7

Serious Consequences of Alcohol Use, Past 30 Days, by Sociodemographic Characteristic, Service, and Region

Sociodemographic Characteristics	Service/Region								All Services	
	Army		Navy		Marine Corps		Air Force			
	CONUS ^a	OCONUS ^b	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS
Gender										
Male	13.9 (1.2) ²	17.1 (0.9) ¹	14.5 (0.8) ⁴	10.6 (0.8) ³	19.4 (0.9)	19.6 (1.7)	6.7 (1.0)	5.9 (0.5)	13.7 (0.9) ¹⁰	11.5 (0.5) ⁹
Female	10.7 (2.1)	12.1 (1.9)	14.5 (1.7)	11.1 (1.7)	20.6 (1.9) ⁶	13.1 (1.0) ⁵	5.4 (0.9)	6.4 (1.4)	10.9 (1.2)	9.3 (0.9)
Race/Ethnicity										
White, non-Hispanic	13.0 (1.3) ²	16.5 (1.0) ¹	14.8 (1.1) ⁴	10.0 (1.4) ³	19.8 (1.2)	18.6 (1.9)	6.0 (0.9)	5.3 (0.4)	12.8 (0.9) ¹⁰	10.2 (0.6) ⁹
African American, non-Hispanic	14.1 (2.5)	15.2 (1.9)	14.0 (1.5) ⁴	8.1 (1.4) ³	17.3 (2.9)	17.8 (1.4)	4.6 (1.4)	7.3 (1.4)	13.0 (1.8)	11.1 (1.0)
Hispanic	13.0 (1.5) ²	18.7 (2.0) ¹	16.2 (1.4)	18.5 (2.0)	18.8 (1.8)	19.4 (3.1)	10.9 (2.1)	8.2 (2.0)	14.1 (1.0)	15.8 (1.1)
Other	16.2 (3.7)	14.5 (2.7)	10.9 (1.4)	8.6 (1.7)	18.9 (3.6)	20.7 (1.4)	7.5 (2.5)	6.4 (2.2)	15.1 (2.8)	10.7 (1.2)
Education										
High school or less	16.0 (1.4) ²	21.8 (1.2) ¹	15.3 (0.9)	13.3 (1.4)	20.8 (1.0)	22.0 (2.5)	14.3 (1.9) ⁸	7.7 (1.7) ⁷	16.6 (1.0)	16.0 (0.9)
Some college	11.9 (1.2)	15.0 (1.2)	14.6 (1.2) ⁴	11.0 (1.0) ³	19.8 (1.6)	18.5 (1.6)	5.7 (0.9)	6.2 (0.6)	11.7 (0.8)	10.2 (0.6)
College graduate	6.6 (1.8)	5.6 (1.2)	9.5 (1.4) ⁴	3.4 (1.2) ³	4.8 (1.7)	6.1 (1.0)	2.7 (0.6)	2.5 (0.6)	5.1 (0.9)	3.8 (0.5)
Family Status										
Not married	19.3 (1.5)	20.6 (0.9)	17.8 (1.1) ⁴	13.5 (1.2) ³	22.0 (1.0)	22.0 (1.2)	10.8 (1.4)	9.1 (0.7)	18.5 (1.0) ¹⁰	15.1 (0.5) ⁹
Married, spouse not present	15.5 (2.2)	12.6 (1.2)	16.3 (2.1)	15.3 (2.7)	18.9 (3.3) ⁶	34.4 (5.4) ⁵	4.2 (3.0)	3.3 (1.0)	15.2 (1.8) ¹⁰	9.8 (1.0) ⁹
Married, spouse present	8.4 (1.1)	10.5 (1.1)	9.7 (0.9) ⁴	6.9 (1.0) ³	14.7 (1.3)	12.6 (1.4)	3.5 (0.7)	4.0 (0.4)	8.1 (0.8)	7.0 (0.5)
Pay Grade										
E1–E3	16.1 (1.6) ²	23.2 (1.1) ¹	18.0 (1.2)	17.5 (3.1)	19.1 (1.3)	23.7 (2.6)	12.7 (1.8)	9.3 (1.5)	16.6 (1.0)	18.5 (1.1)
E4–E6	14.5 (1.3)	15.0 (1.3)	13.6 (0.9) ⁴	10.5 (0.6) ³	22.0 (1.3)	20.9 (1.0)	6.6 (1.2)	6.6 (0.6)	14.2 (1.0) ¹⁰	10.9 (0.6) ⁹
E7–E9	4.2 (1.5)	4.4 (1.4)	6.6 (1.8)	6.3 (1.1)	7.5 (2.2)	5.5 (1.6)	3.8 (1.0)	1.6 (1.2)	4.4 (1.0)	3.7 (0.6)
W1–W5, O1–O10	4.3 (1.9)	9.0 (1.7)	10.7 (3.8) ⁴	2.7 (1.4) ³	4.4 (1.5)	3.7 (0.7)	2.4 (0.6)	1.8 (0.7)	3.7 (0.9)	3.8 (0.7)
Total	13.5 (1.1) ²	16.3 (0.8) ¹	14.5 (0.8) ⁴	10.7 (0.8) ³	19.3 (0.9) ⁶	16.1 (0.7) ⁵	6.4 (0.9)	6.1 (0.5)	13.2 (0.8)	12.0 (0.4)

Note: Table displays the percentage of military personnel by sociodemographic characteristic, Service, and region who reported three or more serious consequences in the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of sociodemographic characteristics and serious consequences of alcohol use are given in Sections 2.7.1 and 2.7.3, respectively.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Serious Consequences of Alcohol Use, Q43a–i).

specific groups, males (17.1%), Hispanics (18.7%), less educated personnel (21.8%), unmarried persons (20.6%), and those of lower ranks (23.2%) showed the highest prevalence of serious consequences. Among Army personnel, CONUS prevalence rates were typically lower than OCONUS rates and highest among those in similar sociodemographic groups. Navy personnel were the notable exception in that the rates for males and females were nearly identical. Marine Corps personnel evidenced the highest rates overall, while Air Force personnel showed the lowest overall rates for serious consequences. The highest risk group in the Marine Corps was OCONUS married personnel whose spouse was not present (34.4%).

3.1.5 *Correlates of Alcohol Use and Heavy Alcohol Consumption*

For average daily ethanol consumption among drinkers (Table 3.1.8), an examination of sociodemographic differences by Service and region revealed that, overall, consumption was highest among CONUS and OCONUS Marine Corps personnel (5.9 daily ounces and 6.2 daily ounces, respectively). The lowest consumption patterns were found among CONUS and OCONUS Air Force personnel (3.1 daily ounces and 3.5 daily ounces, respectively). Consumption rates were highest among ranks E1 to E3 at OCONUS locations (6.9 daily ounces) and lowest among CONUS officers (2.4 daily ounces).

In addition to rank, education level was inversely correlated with heavy alcohol consumption, with persons having a high school education or less showing the heaviest consumption patterns across all Services.

There were few regional differences for all branches except the Navy, where there was a trend for lower consumption at OCONUS bases. The Navy has consistently shown lower estimates of alcohol use measures for OCONUS regions, which may be because of the strictly enforced restrictions aboard ship.

Estimates of heavy drinking generally have been lower among Air Force personnel than personnel from the other Services, and these findings are no exception. Table 3.1.9 shows that the percentage of heavy drinkers,

from lowest to highest among CONUS bases, was 17.1% among Air Force personnel, 25.3% among Navy personnel, 28.8% among Army personnel, and 41.2% among Marine Corps personnel. At OCONUS installations, the Navy had the lowest rates of heavy drinking (23.4%), followed by the Air Force (24.7%), Army (35.8%), and Marine Corps (39.9%).

Prevalence rates were significantly higher among OCONUS males in the Army (38.4%) and Air Force (26.2%) compared with CONUS males in these Service branches (30.6% and 19.5%, respectively). There were no regional differences for males in the Navy and Marine Corps.

Among Army personnel, heavy drinking rates were highest among OCONUS personnel who were White, non-Hispanic (39.3%); had a high school education or less (46.4%); were unmarried (42.7%); and in pay grades E1 through E3 (52.4%). The lowest rates of heavy drinking were found for CONUS women (14.4%) and CONUS officers (7.6%).

The Air Force also showed higher heavy drinking rates among OCONUS personnel who were male (26.2%), Hispanic (29.9%), had a high school education or less (29.4%), were unmarried (35.1%), and in pay grades E4 through E6 (28.2%) when compared with CONUS personnel in those categories.

The Navy had high rates of heavy drinking for CONUS personnel who were male (27.7%); White, non-Hispanic (29.8%); and unmarried (30.5%). Low rates of heavy drinking were found among OCONUS college graduates (9.3%) and OCONUS officers (6.2%).

Among Marines, heavy drinking at CONUS installations was highest for males (43.4%) and White, non-Hispanic (43.9%) personnel. At OCONUS locations, personnel who had a high school education or less (46.3%), were unmarried (49.3%), and who were in pay grades E1 through E3 (48.8%) had the highest prevalence rates for heavy drinking.

Table 3.1.8

Average Daily Ounces of Ethanol, Past 30 Days, by Sociodemographic Characteristic, Service, and Region

Sociodemographic Characteristics	Service/Region								All Services	
	Army		Navy		Marine Corps		Air Force			
	CONUS ^a	OCONUS ^b	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS
Gender										
Male	5.2 (0.2) ²	6.1 (0.2) ¹	4.6 (0.2) ⁴	3.8 (0.1) ³	6.1 (0.2)	6.4 (0.2)	3.2 (0.2)	3.7 (0.2)	5.0 (0.2)	4.7 (0.1)
Female	2.8 (0.3)	3.3 (0.2)	2.6 (0.1)	3.0 (0.3)	3.7 (0.3)	3.6 (0.2)	2.6 (0.3)	2.7 (0.2)	2.8 (0.2)	2.9 (0.1)
Race/Ethnicity										
White, non-Hispanic	4.9 (0.2) ²	5.8 (0.3) ¹	4.0 (0.2)	3.7 (0.2)	5.6 (0.2)	6.1 (0.2)	2.8 (0.2) ⁸	3.5 (0.2) ⁷	4.6 (0.2)	4.3 (0.1)
African American, non-Hispanic	4.9 (0.3)	5.3 (0.4)	3.9 (0.2)	3.5 (0.3)	5.7 (0.5)	6.3 (0.3)	2.8 (0.2) ⁸	3.4 (0.2) ⁷	4.6 (0.2)	4.3 (0.2)
Hispanic	5.2 (0.4)	6.4 (0.6)	4.8 (0.2)	4.6 (0.3)	6.9 (0.4)	6.7 (0.4)	4.7 (0.6)	3.5 (0.2)	5.5 (0.3)	5.2 (0.2)
Other	5.2 (0.5)	5.5 (0.5)	5.1 (0.6) ⁴	3.0 (0.2) ³	4.7 (0.3) ⁶	6.5 (0.7) ⁵	3.6 (0.4)	4.2 (0.4)	4.9 (0.4)	4.4 (0.2)
Education										
High school or less	5.9 (0.2) ²	7.1 (0.2) ¹	4.8 (0.2)	4.8 (0.2)	6.6 (0.2)	7.2 (0.4)	4.8 (0.4)	4.6 (0.2)	5.9 (0.1)	5.9 (0.2)
Some college	4.1 (0.2) ²	5.1 (0.3) ¹	4.0 (0.2) ⁴	3.3 (0.1) ³	5.2 (0.2)	5.8 (0.4)	3.0 (0.2) ⁸	3.5 (0.1) ⁷	4.0 (0.1)	4.0 (0.1)
College graduate	3.6 (0.6)	3.6 (0.3)	3.0 (0.4)	2.2 (0.3)	2.7 (0.2)	2.9 (0.1)	2.3 (0.1)	2.2 (0.1)	3.0 (0.3)	2.6 (0.1)
Family Status										
Not married	5.6 (0.3) ²	6.6 (0.3) ¹	4.7 (0.3)	4.3 (0.2)	6.4 (0.2)	7.2 (0.3)	3.7 (0.2) ⁸	4.4 (0.2) ⁷	5.5 (0.2)	5.4 (0.2)
Married, spouse not present	5.3 (0.4)	5.3 (0.3)	4.3 (0.2)	3.6 (0.4)	6.7 (0.7)	5.7 (0.9)	2.6 (0.2) ⁸	3.7 (0.3) ⁷	5.2 (0.3) ¹⁰	4.3 (0.2) ⁹
Married, spouse present	4.3 (0.2)	4.4 (0.3)	3.5 (0.2)	3.0 (0.2)	4.7 (0.2)	4.9 (0.3)	2.7 (0.2)	2.6 (0.1)	4.0 (0.2) ¹⁰	3.3 (0.1) ⁹
Pay Grade										
E1–E3	6.3 (0.4) ²	7.8 (0.2) ¹	6.0 (0.2)	5.7 (0.4)	6.4 (0.3) ⁶	8.2 (0.7) ⁵	4.5 (0.4)	5.1 (0.5)	6.1 (0.2)	6.9 (0.3)
E4–E6	5.0 (0.2)	5.3 (0.3)	3.7 (0.1)	3.6 (0.1)	5.9 (0.2)	6.1 (0.2)	3.3 (0.2)	3.7 (0.1)	4.9 (0.1) ¹⁰	4.3 (0.1) ⁹
E7–E9	2.8 (0.2)	3.2 (0.4)	2.8 (0.5)	2.3 (0.2)	2.7 (0.3)	3.1 (0.3)	2.3 (0.3)	1.9 (0.1)	2.7 (0.2)	2.4 (0.1)
W1–W5, O1–O10	2.4 (0.5)	3.1 (0.6)	2.4 (0.4)	1.9 (0.3)	2.7 (0.2)	2.6 (0.1)	2.2 (0.1)	2.2 (0.1)	2.4 (0.2)	2.4 (0.2)
Total	5.0 (0.2) ²	5.8 (0.2) ¹	4.3 (0.2) ⁴	3.7 (0.2) ³	5.9 (0.2)	6.2 (0.2)	3.1 (0.2)	3.5 (0.2)	4.8 (0.1)	4.8 (0.1)

Note: Table displays the percentage of military personnel by sociodemographic characteristic, Service, and region who reported the average ounces of ethanol consumed in the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of sociodemographic characteristics and average daily ounces of ethanol are given in Sections 2.7.1 and 2.7.3, respectively.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Average Daily Ounces of Ethanol, Past 30 Days, Q24–Q35).

Table 3.1.9 Heavy Alcohol Use,^a Past 30 Days, by Sociodemographic Characteristic, Service, and Region

Sociodemographic Characteristics	Service/Region								All Services	
	Army		Navy		Marine Corps		Air Force			
	CONUS ^b	OCONUS ^c	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS
Gender										
Male	30.6 (1.9) ²	38.4 (1.6) ¹	27.7 (1.4)	24.5 (0.9)	43.4 (1.7)	42.5 (1.6)	19.5 (1.5) ⁸	26.2 (2.1) ⁷	30.6 (1.3)	30.9 (1.1)
Female	14.4 (2.3) ²	21.3 (2.2) ¹	15.8 (1.8)	17.0 (1.4)	23.6 (3.0)	20.6 (4.3)	8.5 (1.3) ⁸	17.0 (2.7) ⁷	14.1 (1.4) ¹⁰	18.2 (1.4) ⁹
Race/Ethnicity										
White, non-Hispanic	30.2 (2.2) ²	39.3 (2.0) ¹	29.8 (1.1)	27.2 (1.1)	43.9 (2.0)	43.9 (2.0)	18.1 (1.4) ⁸	25.0 (1.9) ⁷	29.9 (1.5)	30.7 (1.2)
African American, non-Hispanic	22.8 (2.3) ²	30.2 (2.1) ¹	17.1 (2.0)	16.9 (1.4)	34.3 (3.5)	31.3 (2.7)	9.4 (1.3) ⁸	20.0 (2.8) ⁷	21.2 (1.6)	23.7 (1.2)
Hispanic	31.2 (2.6)	34.9 (2.8)	28.4 (1.8)	23.5 (2.4)	39.1 (3.0)	37.2 (2.3)	25.7 (3.6)	29.9 (4.1)	32.0 (1.8)	31.0 (1.6)
Other	28.8 (3.7)	31.3 (3.2)	14.7 (2.6)	16.5 (2.2)	33.8 (5.0)	36.9 (4.7)	12.4 (2.7) ⁸	23.9 (3.9) ⁷	26.4 (2.8)	24.7 (1.6)
Education										
High school or less	34.8 (2.2) ²	46.4 (1.3) ¹	27.3 (1.8) ⁴	32.4 (1.3) ³	44.0 (2.1)	46.3 (2.4)	25.0 (2.3)	29.4 (2.8)	35.3 (1.6)	38.4 (1.3)
Some college	24.3 (1.9) ²	31.5 (1.7) ¹	25.6 (1.7)	21.7 (1.0)	40.2 (2.1)	39.7 (2.7)	16.0 (1.5) ⁸	26.5 (2.7) ⁷	24.3 (1.3)	27.5 (1.4)
College graduate	13.7 (2.8)	18.4 (2.3)	15.8 (2.7)	9.3 (2.1)	21.6 (2.4)	18.5 (1.6)	14.3 (1.0)	12.2 (1.8)	14.7 (1.4)	13.7 (1.1)
Family Status										
Not married	37.2 (2.7)	42.7 (1.1)	30.5 (1.5)	30.2 (1.2)	47.5 (2.3)	49.3 (1.9)	23.0 (1.1) ⁸	35.1 (2.5) ⁷	36.6 (1.8)	37.9 (1.1)
Married, spouse not present	29.7 (3.6)	36.9 (3.2)	20.9 (2.2) ⁴	29.1 (2.7) ³	41.1 (4.4)	39.4 (3.3)	16.0 (2.8) ⁸	31.9 (2.8) ⁷	29.6 (2.8)	33.4 (1.7)
Married, spouse present	21.6 (1.9)	23.5 (2.0)	19.3 (1.3) ⁴	15.3 (1.0) ³	30.1 (1.6)	29.1 (3.1)	13.4 (1.5)	11.9 (1.7)	20.8 (1.3) ¹⁰	17.1 (1.2) ⁹
Pay Grade										
E1–E3	34.9 (2.3) ²	52.4 (1.7) ¹	34.7 (2.0)	39.6 (2.4)	41.0 (2.1) ⁶	48.8 (3.2) ⁵	21.5 (1.9)	26.8 (3.1)	35.0 (1.5) ¹⁰	42.5 (1.7) ⁹
E4–E6	30.4 (2.0)	31.8 (1.9)	21.9 (1.3)	22.9 (1.2)	45.1 (2.2)	43.9 (1.6)	18.1 (1.7) ⁸	28.2 (2.3) ⁷	29.8 (1.5)	29.1 (1.2)
E7–E9	12.4 (2.3)	15.4 (4.2)	14.3 (2.5)	13.4 (2.9)	13.6 (4.5)	16.4 (5.6)	10.3 (1.6)	10.2 (2.3)	12.0 (1.6)	12.6 (1.7)
W1–W5, O1–O10	7.6 (2.4) ²	14.7 (2.3) ¹	13.1 (4.0)	6.2 (1.6)	24.9 (2.7) ⁶	15.6 (1.7) ⁵	15.4 (1.5)	13.3 (2.2)	12.5 (1.5)	12.6 (1.3)
Total	28.8 (1.9) ²	35.8 (1.4) ¹	25.3 (1.4)	23.4 (1.0)	41.2 (1.8)	39.9 (1.4)	17.1 (1.3) ⁸	24.7 (2.1) ⁷	28.4 (1.3)	31.2 (0.9)

Note: Table displays the percentage of military personnel by sociodemographic characteristic, Service, and region who were classified as heavy alcohol users in the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of sociodemographic characteristics are given in Section 2.7.1.

^aDefined as consumption of five or more drinks on the same occasion at least once a week in the past 30 days.

^bRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^cRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Heavy Alcohol Use, Q24–Q35).

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3.2 Tobacco Use

For many years, the military has had a reputation as an environment in which tobacco use is accepted and common. In 1980, just over half of military personnel on active duty were smokers (Bray et al., 2006). Beginning in the mid-1980s, DoD increased efforts to lower tobacco use by members of the armed forces through a comprehensive health promotion program that placed emphasis on tobacco prevention and cessation (DoD, 1986). This has been reinforced with other directives that restrict military personnel from smoking cigarettes in official buildings, buses, or vans; provide information regarding the health consequences of all forms of tobacco use at entry into the military; and encourage health care providers to inquire about the patient's tobacco use (DoD, 1994, 1999). In addition, there has been a focus on making healthy lifestyle choices, as encouraged in the Public Health Service's (PHS's) *Healthy People 2010* (U.S. Department of Health and Human Services, 2000) and earlier *Healthy People 2000* objectives (PHS, 1991).

As a result of these efforts and related trends in use in the civilian sector, since 1980, the smoking rate in the military has declined sharply. Still, in 2005, about one-third of active-duty personnel reported cigarette smoking in the past month (Bray et al., 2006; Bray and Hourani, 2007). In addition to cigarette smoking, in 2005, 27% of personnel indicated cigar or pipe use, and 14% reported past-month smokeless tobacco use (Bray et al., 2006). These findings are of concern to DoD for several reasons including smoking-related illnesses, financial costs, long-term health outcomes, and decreases in military readiness.

Smoking-related illnesses take a toll on the physical readiness of the armed forces. Research has demonstrated a strong association between the use of tobacco and negative health outcomes, such as cardiovascular diseases, various cancers, and pulmonary disease (Haddock et al., 1998). The use of tobacco also has been associated with negative performance outcomes, such as higher absenteeism, diminished motor and perceptual skills, and poor endurance (Chisick, Poindexter, & York, 1998). In addition to concerns about illnesses, there are concerns about the cost of smoking. Each year, DoD spends an estimated \$875 million on smoking-related health care and productivity loss (Conway, 1998). Yet another reason for concern is that most of the personnel currently serving in the armed forces will eventually return to civilian life, and DoD has an obligation to return veterans to the civilian sector in the healthiest condition possible (Chisick et al., 1998). Finally, there is evidence that smoking decreases military readiness (Robbins, 2000; Jensen, 1986; Conway & Cronan, 1992) and is predictive of early separation (Klesges, Haddock, Chang, Talcott, & Lando, 2001).

Of course, there are many influences that may contribute to tobacco use among military personnel, including installation factors such as regional differences. This section examines installation factors that may influence tobacco use in the active force. It presents findings on past-month prevalence of any cigarette use, daily cigarette use, smokeless tobacco use, and cigar use from military personnel at 24 installations (six per Service). Recall that these installations were selected because they

had known relatively high rates of tobacco use to permit a better understanding of the factors that contribute to use; they do not represent a random sample of military installations. A primary focus of the analyses in this section is the examination of regional installation differences (i.e., CONUS versus OCONUS installations) in tobacco use among the participating installations in this study. In addition to tobacco prevalence, information also is presented on demographic correlates of tobacco use, nicotine dependence, and social and environmental influences. Finally, cigarette smoking quit attempts and cessation successes are examined.

3.2.1 Tobacco Use, by Service and Region

Table 3.2.1 shows the prevalence of tobacco use during the past 30 days for four key tobacco measures among the installations in this study: any cigarette use, daily cigarette use, smokeless tobacco use, and cigar use. This table presents individual and overall Service estimates, along with regional CONUS-OCONUS differences. Recall that these estimates can only be generalized to the participating units at the participating installations and should not be interpreted as overall DoD or Service prevalence rates. Rather, the main interest is to understand the factors underlying CONUS-OCONUS differences.

As shown in Table 3.2.1, smoking rates were relatively high at the installations comprising this study. Overall, 39.2% reported any cigarette use, 35.1% reported daily cigarette use, 16.6% reported smokeless tobacco use, and 30.8% reported cigar use in the past month. Interestingly, the comparison of the rates of any cigarette use to daily cigarette use indicates that a large majority of cigarette users smoke daily. The table also indicates that CONUS installations were significantly more likely to engage in any cigarette smoking and daily cigarette smoking than OCONUS installations, but there were no regional differences for smokeless tobacco or cigar use. As can be seen, and as might be expected, there were also differences across the Services in the rates of tobacco use and whether there were statistically significant regional differences. For any cigarette smoking, only the Marine Corps showed significant CONUS-OCONUS differences, with CONUS rates

being higher than OCONUS rates. Of interest, there were no significant regional differences among daily cigarette smokers. For smokeless tobacco use, even though there were no overall regional differences, the Marine Corps and Air Force both showed significant differences, but in opposite directions. The Marine Corps showed higher CONUS rates of smokeless use, whereas the Air Force showed higher OCONUS rates. Similarly, cigar use showed no overall regional differences, but among the Services, the Navy had a significantly higher rate of use in OCONUS compared with CONUS.

To further understand regional differences, the next three tables examine sociodemographic correlates of tobacco use. Table 3.2.2 assesses these differences for any cigarette smoking. The pattern of higher CONUS cigarette smoking rates compared with OCONUS rates observed in Table 3.2.1 also appeared in Table 3.2.2 among all Services for the following:

- males
- White, non-Hispanic and “Other” race/ethnicity personnel
- personnel with a high school education or less
- personnel married with spouse present
- personnel in pay grades E4 through E6

Although other sociodemographic groups did not show any statistically significant regional differences, the relations in the data were in the same direction.

Examination of sociodemographic regional differences for the Services shows that the Navy and Marine Corps had the same pattern of CONUS use as all Service personnel for males; White, non-Hispanics; and married personnel with a spouse present, and for personnel in E4 through E6 pay grades for the Marine Corps. A few other significant findings occurred for individual Services, which are noted in the table. A finding of interest is that there were some reversals of the CONUS rates being greater than OCONUS smoking rates. Specifically, Army rates for high school or less and personnel in pay grades E1 through E3 both showed OCONUS rates significantly higher than CONUS rates.

Table 3.2.1 Tobacco Use, Past 30 Days, by Service and Region

Service/Region	Tobacco Measure			
	Any Cigarette Use	Daily Cigarette Use	Smokeless Tobacco Use	Cigar Use
Army				
CONUS ^a	43.6 (2.0)	39.9 (1.8)	18.4 (1.6)	30.0 (1.7)
OCONUS ^b	44.3 (1.3)	41.1 (1.5)	18.6 (1.3)	30.7 (1.1)
Total	43.6 (1.8)	40.1 (1.6)	18.4 (1.4)	30.1 (1.5)
Navy				
CONUS	35.9 (1.4)	31.3 (1.2)	9.3 (0.8)	27.4 (0.9) ⁵
OCONUS	32.9 (1.3)	29.0 (1.1)	9.4 (0.9)	30.9 (1.1) ⁴
Total	34.2 (1.0)	30.0 (0.8)	9.3 (0.6)	29.4 (0.7)
Marine Corps				
CONUS	43.6 (1.4) ⁸	36.9 (1.3)	22.8 (1.1) ⁸	37.8 (1.5)
OCONUS	39.5 (1.1) ⁷	34.5 (1.1)	19.7 (0.9) ⁷	35.4 (1.0)
Total	41.6 (0.9)	35.7 (0.9)	21.2 (0.7)	36.6 (0.9)
Air Force				
CONUS	25.8 (1.9)	22.2 (1.9)	9.7 (0.8) ¹¹	28.7 (1.2)
OCONUS	29.7 (1.6)	25.7 (1.5)	13.0 (1.0) ¹⁰	27.5 (0.6)
Total	27.6 (1.2)	23.9 (1.2)	11.3 (0.6)	28.1 (0.7)
All Services				
CONUS	40.5 (1.4) ¹⁴	36.5 (1.3) ¹⁴	17.1 (1.1)	30.6 (1.2)
OCONUS	36.1 (0.7) ¹³	32.0 (0.7) ¹³	15.4 (0.5)	31.1 (0.5)
Total	39.2 (1.0)	35.1 (0.9)	16.6 (0.8)	30.8 (0.9)

Note: Table displays the percentage of military personnel by Service and region who reported any cigarette use, daily cigarette use, smokeless tobacco use, and cigar use within the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of tobacco use are given in Section 2.7.4.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Any Cigarette Use, Q52 and Q57; Daily Cigarette Use, Q52, Q57, and Q62; Smokeless Tobacco Use, Q71; Cigar Use, Q80).

Similarly, Air Force rates for not married personnel and personnel in pay grades E4 through E6 showed OCONUS smoking rates significantly higher than CONUS rates. These reversals suggest that factors besides installation policies and practices were likely to be influencing cigarette use. If installation influences fully explained the pattern of results, we would not see these reversals.

Table 3.2.3 presents regional comparisons for smokeless tobacco use. Despite no overall CONUS-OCONUS differences for all personnel, CONUS-OCONUS differences occurred for several sociodemographic variables. These included

- males;
- White, non-Hispanics;

- those with some college education;
- married personnel regardless of spouse presence; and
- those in pay grades E4 through E6.

In all cases, those stationed at CONUS installations were more likely to use smokeless tobacco than those stationed at OCONUS installations.

Examination of demographic CONUS-OCONUS differences for the Services shows a variety of patterns, some consistent with the overall pattern, and a number that differ. For example, Marine Corps and Air Force personnel both showed overall CONUS-OCONUS differences and differences for males; White, non-Hispanics; and married spouse present. Use among

Table 3.2.2

Any Cigarette Use, Past 30 Days, by Sociodemographic Characteristic, Service, and Region

Sociodemographic Characteristics	Service/Region								All Services	
	Army		Navy		Marine Corps		Air Force			
	CONUS ^a	OCONUS ^b	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS
Gender										
Male	45.9 (1.8)	46.7 (1.5)	38.2 (1.3) ⁴	34.3 (1.3) ³	45.3 (1.5) ⁶	38.7 (1.7) ⁵	26.2 (2.0)	30.8 (1.7)	42.8 (1.4) ¹⁰	36.6 (0.8) ⁹
Female	25.2 (4.5)	31.2 (2.7)	27.0 (2.1)	25.5 (2.1)	30.2 (2.3)	24.4 (4.4)	23.5 (3.0)	22.3 (2.4)	25.5 (2.7)	25.4 (1.5)
Race/Ethnicity										
White, non-Hispanic	50.8 (2.1)	52.4 (1.8)	44.5 (1.7) ⁴	37.0 (1.6) ³	51.0 (1.5) ⁶	40.8 (2.3) ⁵	28.2 (2.4)	31.5 (1.9)	46.8 (1.5) ¹⁰	38.1 (1.0) ⁹
African American, non-Hispanic	25.8 (2.3)	27.7 (2.1)	23.7 (1.6)	20.0 (1.9)	26.3 (4.0)	29.5 (4.8)	16.4 (2.0)	19.0 (2.2)	24.4 (1.6)	23.1 (1.2)
Hispanic	35.6 (3.1)	43.3 (2.9)	29.3 (2.0)	27.6 (1.9)	33.8 (2.1)	33.8 (1.6)	26.6 (3.3)	28.7 (3.3)	33.8 (2.0)	33.5 (1.4)
Other	49.5 (3.8)	44.7 (3.5)	30.4 (2.7)	35.5 (2.6)	36.3 (4.5)	32.9 (2.8)	26.6 (3.1)	27.8 (2.4)	44.3 (3.1) ¹⁰	35.4 (1.5) ⁹
Education										
High school or less	53.3 (1.4) ²	58.6 (1.7) ¹	38.6 (1.6)	36.7 (1.9)	48.2 (1.8)	45.4 (2.3)	35.9 (2.1)	38.6 (2.8)	50.6 (1.1) ¹⁰	45.5 (1.2) ⁹
Some college	36.5 (2.6)	40.8 (1.5)	35.0 (1.7)	34.8 (1.2)	41.5 (1.7) ⁶	33.9 (1.3) ⁵	29.1 (1.7)	31.2 (1.2)	35.5 (1.7)	34.3 (0.7)
College graduate	20.6 (3.7)	16.9 (2.2)	26.7 (3.9) ⁴	15.0 (1.7) ³	9.4 (2.1)	13.6 (1.3)	13.0 (1.3)	12.1 (1.9)	17.1 (1.9)	14.0 (1.1)
Family Status										
Not married	46.3 (2.2)	49.5 (1.4)	36.7 (1.7)	35.8 (1.5)	45.7 (1.8)	43.1 (1.2)	28.6 (1.6) ⁸	34.3 (2.3) ⁷	43.2 (1.5)	40.1 (1.0)
Married, spouse not present	38.3 (4.2)	44.2 (2.7)	40.4 (2.8)	36.6 (3.4)	48.6 (5.0)	48.9 (6.6)	37.5 (6.8)	30.9 (2.9)	39.6 (3.3)	36.7 (1.8)
Married, spouse present	42.3 (2.1)	36.0 (2.4)	34.1 (2.0) ⁴	29.0 (1.4) ³	38.6 (1.9) ⁶	28.2 (2.0) ⁵	23.4 (2.2)	24.5 (2.4)	38.3 (1.5) ¹⁰	28.4 (1.1) ⁹
Pay Grade										
E1–E3	49.3 (2.6) ²	62.5 (1.8) ¹	42.8 (2.0)	41.6 (2.9)	49.2 (2.2)	47.0 (1.7)	34.1 (2.2)	30.7 (3.0)	47.1 (1.6)	47.2 (1.5)
E4–E6	46.1 (2.1) ²	40.5 (1.9) ¹	34.4 (1.4)	33.0 (1.5)	43.9 (1.2) ⁶	40.4 (1.2) ⁵	30.3 (1.8) ⁸	35.1 (1.3) ⁷	43.4 (1.6) ¹⁰	36.2 (0.8) ⁹
E7–E9	24.0 (3.5)	26.1 (4.8)	25.3 (2.9)	30.2 (2.4)	17.7 (4.8)	19.0 (0.7)	20.0 (2.5)	14.9 (2.4)	22.8 (2.4)	21.6 (1.7)
W1–W5, O1–O6	18.4 (5.0)	15.3 (2.7)	+ (+)	12.8 (1.7)	6.5 (1.8)	8.6 (1.6)	11.6 (1.4) ⁸	5.9 (1.6) ⁷	14.6 (2.5)	9.6 (1.2)
Total	43.6 (2.0)	44.3 (1.3)	35.9 (1.4)	32.9 (1.3)	43.6 (1.4) ⁶	39.5 (1.1) ⁵	25.8 (1.9)	29.7 (1.6)	40.5 (1.4) ¹⁰	36.1 (0.7) ⁹

Note: Table displays the percentage of military personnel by sociodemographic characteristic, Service, and region who reported any cigarette use in the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of sociodemographic characteristics and cigarette use are given in Sections 2.7.1 and 2.7.4, respectively.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Any Cigarette Use, Q52 and Q57).

Table 3.2.3 Smokeless Tobacco Use, Past 30 Days, by Sociodemographic Characteristic, Service, and Region

Sociodemographic Characteristics	Service/Region								All Services	
	Army		Navy		Marine Corps		Air Force			
	CONUS ^a	OCONUS ^b	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS
Gender										
Male	20.2 (1.5)	21.1 (1.3)	11.4 (0.9)	10.8 (1.0)	24.9 (1.0) ⁶	21.3 (0.8) ⁵	11.6 (0.9) ⁸	15.8 (1.2) ⁷	19.2 (1.1) ¹⁰	16.5 (0.6) ⁹
Female	3.7 (1.9)	5.0 (1.4)	1.0 (0.5)	1.2 (0.5)	4.0 (1.2)	3.0 (1.5)	2.0 (0.8)	1.1 (0.5)	3.1 (1.1)	2.2 (0.4)
Race/Ethnicity										
White, non-Hispanic	24.4 (1.5)	26.5 (1.7)	13.9 (0.8)	12.6 (1.4)	30.1 (1.1) ⁶	22.9 (0.9) ⁵	12.5 (1.1) ⁸	16.2 (1.3) ⁷	22.7 (1.0) ¹⁰	18.3 (0.8) ⁹
African American, non-Hispanic	5.8 (1.3)	6.2 (1.1)	2.6 (0.6)	2.6 (0.6)	7.6 (1.9)	10.4 (2.3)	1.9 (0.6)	3.3 (1.5)	5.1 (0.9)	4.7 (0.6)
Hispanic	11.3 (2.0)	12.0 (1.8)	5.7 (1.1)	7.3 (1.4)	11.6 (1.2)	16.7 (2.4)	8.0 (1.5)	6.2 (1.7)	10.6 (1.3)	10.0 (1.0)
Other	17.6 (3.1)	18.3 (2.2)	6.2 (1.2)	6.5 (0.8)	17.2 (4.5)	18.6 (2.2)	3.0 (1.4) ⁸	9.7 (2.5) ⁷	15.1 (2.4)	11.8 (1.1)
Education										
High school or less	19.7 (1.8) ²	29.0 (1.5) ¹	10.2 (0.7) ⁴	13.7 (1.3) ³	24.6 (1.4)	22.0 (0.9)	13.7 (1.6)	16.8 (1.0)	19.6 (1.3)	20.7 (0.7)
Some college	16.9 (1.7) ²	11.6 (1.4) ¹	8.0 (1.2)	8.0 (0.8)	20.1 (1.5)	18.6 (0.6)	8.2 (1.2) ⁸	12.2 (1.0) ⁷	15.1 (1.2) ¹⁰	11.6 (0.6) ⁹
College graduate	16.1 (4.0)	11.4 (1.6)	9.0 (1.6) ⁴	4.0 (1.1) ³	17.5 (3.1)	11.7 (0.6)	10.1 (2.0)	11.0 (2.3)	13.5 (2.0)	9.7 (1.2)
Family Status										
Not married	20.1 (2.0)	21.4 (1.6)	9.5 (1.1)	10.4 (1.1)	23.5 (1.3)	21.7 (1.0)	10.8 (0.8)	13.8 (1.6)	18.7 (1.3)	16.1 (0.8)
Married, spouse not present	21.2 (3.3)	19.3 (2.2)	7.2 (1.3)	6.1 (1.4)	24.5 (3.1)	28.0 (3.9)	15.0 (4.4)	12.1 (1.0)	20.2 (2.5) ¹⁰	14.2 (0.9) ⁹
Married, spouse present	16.0 (1.6)	13.7 (1.8)	9.3 (1.1)	8.8 (1.0)	21.0 (1.6) ⁶	15.2 (0.7) ⁵	8.7 (1.1) ⁸	12.8 (1.0) ⁷	14.9 (1.1) ¹⁰	12.2 (0.6) ⁹
Pay Grade										
E1–E3	22.8 (2.7) ²	31.7 (2.2) ¹	12.5 (1.3)	14.9 (2.1)	25.4 (1.4)	26.6 (2.0)	10.5 (1.3)	15.6 (2.3)	21.3 (1.6)	23.2 (1.3)
E4–E6	17.5 (1.8)	13.1 (1.4)	7.6 (0.9)	9.0 (1.0)	20.7 (1.5)	19.3 (0.8)	8.2 (1.2) ⁸	12.2 (0.9) ⁷	16.1 (1.3) ¹⁰	12.2 (0.5) ⁹
E7–E9	15.4 (2.8) ²	7.2 (2.1) ¹	7.7 (2.1)	6.9 (1.4)	15.7 (4.4) ⁶	4.4 (2.7) ⁵	11.4 (2.0)	13.6 (4.0)	14.1 (2.0)	9.7 (1.8)
W1–W5, O1–O6	18.3 (4.3)	16.5 (2.3)	13.4 (4.4) ⁴	3.9 (1.5) ³	21.8 (3.7) ⁶	11.0 (1.5) ⁵	11.8 (2.2)	14.3 (2.8)	15.8 (2.2)	12.4 (1.6)
Total	18.4 (1.6)	18.6 (1.3)	9.3 (0.8)	9.4 (0.9)	22.8 (1.1) ⁶	19.7 (0.9) ⁵	9.7 (0.8) ⁸	13.0 (1.0) ⁷	17.1 (1.1)	15.4 (0.5)

Note: Table displays the percentage of military personnel by sociodemographic characteristic, Service, and region who reported smokeless tobacco use within the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of sociodemographic characteristics and smokeless tobacco use are given in Sections 2.7.1 and 2.7.4, respectively.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Smokeless Tobacco Use, Q71).

Marines was in the same direction of all personnel overall, with CONUS use being greater than OCONUS use, but the Air Force use was in the opposite direction (i.e., OCONUS use was greater than CONUS use). In fact, all significant Air Force CONUS-OCONUS demographic comparisons were in this direction. In general, the direction of most comparisons shows that use among CONUS personnel was greater than use among OCONUS personnel, even though many were not statistically significant. Like the cigarette use data, these data further suggest that installation influences may be playing some role in smokeless tobacco use, but do not explain the full picture.

Table 3.2.4 presents CONUS-OCONUS comparisons for cigar use. Only one overall difference across all personnel in this sample showed a significant regional difference. This difference was seen among females, with those in OCONUS using cigars at higher rates than those in CONUS. This overall finding is largely accounted for by the Army, which showed high rates of cigar use for OCONUS females compared with CONUS females. Despite the one overall statistically significant demographic difference for all Services, the individual Services showed a number of significant differences, but as with smokeless tobacco and cigarette use, some of the sociodemographic groups showed higher rates in CONUS and others showed higher rates in OCONUS. For the Army and Navy, all significant differences showed OCONUS rates higher than CONUS rates. For the Marine Corps, the opposite pattern held, with CONUS rates being higher than OCONUS rates. The Air Force had a mixture with CONUS use higher for some demographic groups and OCONUS for other demographic groups. Overall, Marines had the highest rates of cigar use (37.8% CONUS, 35.4% OCONUS) and CONUS Marine officers were the highest users (48.2%) among all personnel.

3.2.2 *Nicotine Dependence among Cigarette Smokers*

In addition to examining installation use patterns, we also assessed nicotine dependence among cigarette smokers using the Fagerstrom nicotine dependence scale. Users were classified into low, moderate, and high

levels of nicotine dependence (see Chapter 2 for more details about the scale). Table 3.2.5 displays the dependence rates by Service and region. All smokers had some level of dependence, but the large majority were classified as having low dependence (69.5%). About one-fifth (19.5%) were classified as having moderate dependence and 11.1% as high dependence. Regional comparisons among these three groups showed that OCONUS personnel in the participating installations were more likely to have low dependence than those at the CONUS installations. Personnel with moderate or high dependence were more likely to be in CONUS installations than OCONUS installations. Only the Marine Corps showed CONUS-OCONUS differences for cigarette smokers classified as low and moderate dependence, and their results followed the pattern of all personnel. These findings are informative in understanding the relation of tobacco use and dependence. They are encouraging because they show that the majority of cigarette smokers had low addiction levels. The results also show overall CONUS-OCONUS variation by the installations in this sample and indicate that addiction rates were more severe for those at the CONUS installations.

3.2.3 *Social and Environmental Influences on Tobacco Use, by Service and Region*

Several survey items asked personnel to report on a variety of social and environmental influences related to their tobacco use. These are presented in Table 3.2.6, along with Service and CONUS-OCONUS region comparisons. These included attempts to stop smoking in the past 6 months, whether they started smoking since joining the military, whether they had successfully quit cigarettes since joining the military, whether they used smokeless tobacco because of restrictions on smoking cigarettes, and whether they used smokeless tobacco because it was easier to use than going outside to smoke cigarettes. As shown, 24.2% had attempted to stop smoking cigarettes in the last 6 months. About one-fifth of personnel (20.4%) at participating installations had begun smoking since joining the military, and less than one-tenth of smokers (8.7%) had quit successfully since joining. Few personnel reported that they had switched to smokeless tobacco because of restrictions on cigarette

Table 3.2.4 Cigar Use, Past 30 Days, by Sociodemographic Characteristic, Service, and Region

Sociodemographic Characteristics	Service/Region								All Services	
	Army		Navy		Marine Corps		Air Force			
	CONUS ^a	OCONUS ^b	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS
Gender										
Male	33.1 (1.5)	33.8 (1.2)	31.2 (1.2)	34.0 (1.2)	40.1 (1.4) ⁶	35.0 (2.2) ⁵	34.1 (1.3)	31.7 (0.8)	34.0 (1.1)	33.2 (0.6)
Female	5.2 (1.5) ²	14.0 (1.9) ¹	11.6 (1.1)	12.0 (1.8)	17.9 (2.3)	16.1 (2.0)	8.9 (1.4)	8.1 (1.5)	8.0 (1.0) ¹⁰	11.0 (0.9) ⁹
Race/Ethnicity										
White, non-Hispanic	35.7 (1.6)	36.4 (1.5)	33.5 (1.1) ⁴	37.6 (1.2) ³	41.5 (1.4) ⁶	36.3 (1.7) ⁵	33.6 (1.7) ⁸	29.6 (1.0) ⁷	36.0 (1.1)	33.6 (0.7)
African American, non-Hispanic	16.0 (2.1)	18.5 (1.5)	15.2 (1.4)	15.8 (1.4)	30.0 (2.7) ⁶	19.0 (3.6) ⁵	13.6 (1.5) ⁸	19.0 (1.8) ⁷	16.4 (1.6)	18.0 (0.9)
Hispanic	26.0 (2.9)	30.4 (3.7)	26.5 (2.2)	25.9 (2.4)	32.1 (2.1)	32.8 (1.8)	25.1 (2.8)	29.7 (2.7)	27.1 (2.0)	29.5 (1.5)
Other	30.2 (3.0)	30.3 (2.7)	24.0 (3.1)	24.3 (2.3)	34.6 (4.4)	28.3 (6.4)	23.2 (2.8)	19.0 (2.1)	29.4 (2.3)	24.7 (1.4)
Education										
High school or less	34.2 (2.2)	35.7 (1.4)	26.7 (1.4) ⁴	32.1 (1.7) ³	38.0 (1.7) ⁶	32.6 (2.0) ⁵	28.3 (2.2)	30.9 (1.8)	34.0 (1.6)	33.0 (0.9)
Some college	25.4 (2.2)	25.9 (1.4)	28.3 (1.2)	29.7 (1.2)	36.3 (2.0)	33.5 (2.2)	25.2 (1.7)	27.1 (1.2)	26.5 (1.5)	28.1 (0.7)
College graduate	30.0 (4.7)	32.6 (2.9)	26.5 (2.7)	32.0 (2.2)	40.6 (2.9) ⁶	32.9 (1.4) ⁵	36.8 (3.4) ⁸	24.2 (2.4) ⁷	33.3 (2.7)	28.7 (1.4)
Family Status										
Not married	33.1 (2.2)	31.5 (1.3)	27.2 (1.2) ⁴	32.8 (1.3) ³	39.0 (1.7) ⁶	33.3 (2.2) ⁵	29.6 (1.6)	29.4 (1.5)	33.2 (1.5)	31.3 (0.8)
Married, spouse not present	22.0 (2.6) ²	32.5 (1.9) ¹	23.2 (2.3)	24.6 (2.8)	37.8 (4.2) ⁶	27.7 (2.5) ⁵	20.7 (4.8)	26.2 (1.5)	23.8 (2.0)	27.8 (1.0)
Married, spouse present	29.0 (2.0)	28.5 (1.8)	28.4 (1.9)	30.0 (1.3)	35.4 (2.0)	33.2 (1.8)	28.9 (1.5)	26.4 (1.4)	29.5 (1.4)	28.6 (0.8)
Pay Grade										
E1–E3	34.5 (2.7) ²	41.2 (1.4) ¹	28.0 (1.5) ⁴	34.2 (2.2) ³	38.3 (1.8)	33.3 (2.2)	27.2 (2.4)	29.4 (4.4)	34.1 (1.6)	35.2 (1.4)
E4–E6	29.9 (1.9)	25.5 (1.6)	26.2 (1.3)	28.5 (1.1)	36.5 (1.7)	33.0 (2.9)	24.2 (1.6) ⁸	28.0 (0.8) ⁷	29.6 (1.4)	28.0 (0.6)
E7–E9	16.8 (2.5)	17.5 (3.7)	29.8 (3.9)	33.7 (2.5)	30.4 (5.6)	28.7 (5.2)	25.2 (2.3)	19.4 (2.1)	20.1 (1.8)	23.9 (1.4)
W1–W5, O1–O6	36.0 (5.5)	39.1 (6.3)	36.9 (2.7)	40.9 (3.6)	48.2 (3.4) ⁶	35.0 (2.4) ⁵	43.5 (3.1) ⁸	30.4 (3.1) ⁷	40.3 (2.9)	34.9 (2.3)
Total	30.0 (1.7)	30.7 (1.1)	27.4 (0.9) ⁴	30.9 (1.1) ³	37.8 (1.5)	35.4 (1.0)	28.7 (1.2)	27.5 (0.6)	30.6 (1.2)	31.1 (0.5)

Note: Table displays the percentage of military personnel by sociodemographic characteristic, Service, and region who reported cigar use in the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of sociodemographic characteristics and cigar use are given in Sections 2.7.1 and 2.7.4, respectively.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Cigar Use, Q80).

Table 3.2.5

Symptoms of Nicotine Dependence Among Cigarette Smokers, Past 30 Days, by Service and Region

Service/Region	Nicotine Dependence Level		
	Low	Moderate	High
Army			
CONUS ^a	63.1 (1.9)	22.7 (1.7)	14.2 (1.1)
OCONUS ^b	62.7 (1.5)	20.7 (1.2)	16.5 (1.2)
Total	63.0 (1.7)	22.5 (1.6)	14.5 (1.0)
Navy			
CONUS	79.9 (1.5)	13.5 (1.0)	6.6 (0.8)
OCONUS	78.8 (1.8)	15.0 (0.9)	6.2 (1.2)
Total	79.3 (1.2)	14.3 (0.7)	6.4 (0.8)
Marine Corps			
CONUS	72.6 (1.3) ⁸	19.8 (1.1) ⁸	7.6 (0.8)
OCONUS	78.5 (1.1) ⁷	14.6 (1.0) ⁷	6.9 (0.4)
Total	75.4 (0.8)	17.3 (0.7)	7.3 (0.4)
Air Force			
CONUS	83.1 (2.0)	11.6 (1.5)	5.2 (1.2)
OCONUS	82.4 (2.0)	13.9 (1.5)	3.7 (0.8)
Total	82.8 (1.4)	12.8 (1.0)	4.4 (0.7)
All Services			
CONUS	67.1 (1.5) ¹⁴	20.8 (1.3) ¹⁴	12.1 (0.9) ¹⁴
OCONUS	75.8 (0.9) ¹³	15.9 (0.6) ¹³	8.3 (0.5) ¹³
Total	69.5 (1.2)	19.5 (1.0)	11.1 (0.7)

Note: Table displays the percentage of military personnel by Service and region who were cigarette smokers and who reported symptoms of nicotine dependence in the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of nicotine dependence levels are given in Section 2.7.4.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use Among Military Personnel, 2006 (Symptoms of Nicotine Dependence, Q58–Q63).

use (6.4%). However, 13.9% noted that they used smokeless tobacco use because they could do so indoors. The only regional differences across all participating installations at the level of all Services were for cigarette quit attempts, with those in CONUS more likely to make an attempt than those in OCONUS. The Navy, Marine Corps, and Army showed regional differences. The Navy and Marine Corps were consistent with overall personnel in showing more quit attempts in CONUS than OCONUS, while the Air Force showed the opposite pattern, with more OCONUS attempts. CONUS Marines reported significantly higher quit attempts than OCONUS Marines, whereas OCONUS Air Force had higher rates than CONUS. The Navy and Air Force

showed differences for those who successfully quit, with both having higher success in OCONUS bases. Only the Air Force showed regional differences for using smokeless tobacco because of restrictions and because using smokeless tobacco was easier than going outside. For both measures, OCONUS rates were higher than CONUS. Of note, the Air Force was the only Service showing regional differences on all five measures and consistently showed higher OCONUS rates than CONUS rates. These findings suggest that installation differences influence tobacco use, but also support the earlier suggestion that installation differences alone do not account for the tobacco use patterns.

Table 3.2.6

Social and Environmental Influences on Tobacco Use, by Service and Region

Service/Region	Influence				
	Attempted to Stop Smoking Cigarettes in Past 6 Months	Started Smoking Cigarettes since Joining	Successfully Quit Smoking Cigarettes since Joining	Uses Smokeless Tobacco because of Restrictions	Using Smokeless Tobacco Is Easier than Going Outside
Army					
CONUS ^a	26.6 (1.5)	20.8 (1.0)	8.1 (0.8)	7.7 (0.9)	16.1 (1.5)
OCONUS ^b	25.0 (1.2)	21.7 (1.2)	6.6 (0.5)	8.4 (0.6)	16.5 (1.1)
Total	26.4 (1.4)	20.9 (0.9)	8.0 (0.7)	7.7 (0.8)	16.1 (1.4)
Navy					
CONUS	23.1 (1.2) ⁵	20.0 (0.7)	9.1 (0.7) ⁵	3.9 (0.5)	8.0 (0.6)
OCONUS	20.0 (0.9) ⁴	21.1 (1.1)	11.0 (0.6) ⁴	4.5 (0.4)	8.2 (0.6)
Total	21.3 (0.8)	20.6 (0.7)	10.2 (0.5)	4.2 (0.3)	8.1 (0.5)
Marine Corps					
CONUS	29.1 (1.1) ⁸	26.5 (1.2) ⁸	8.8 (0.5)	8.2 (0.7)	19.3 (1.2)
OCONUS	25.9 (0.6) ⁷	23.5 (0.6) ⁷	8.2 (0.5)	7.5 (0.4)	16.9 (0.7)
Total	27.5 (0.7)	25.0 (0.7)	8.5 (0.3)	7.9 (0.4)	18.1 (0.7)
Air Force					
CONUS	14.5 (0.9) ¹¹	13.2 (1.0) ¹¹	8.9 (0.8) ¹¹	2.1 (0.4) ¹¹	5.5 (0.6) ¹¹
OCONUS	19.2 (1.3) ¹⁰	16.6 (0.8) ¹⁰	11.6 (0.7) ¹⁰	3.4 (0.5) ¹⁰	8.5 (0.6) ¹⁰
Total	16.7 (0.8)	14.8 (0.6)	10.2 (0.6)	2.7 (0.3)	6.9 (0.4)
All Services					
CONUS	25.0 (1.0) ¹⁴	20.3 (0.7)	8.4 (0.6)	6.7 (0.6)	14.4 (1.1)
OCONUS	22.5 (0.5) ¹³	20.5 (0.4)	9.5 (0.3)	5.8 (0.3)	12.5 (0.4)
Total	24.2 (0.7)	20.4 (0.5)	8.7 (0.4)	6.4 (0.4)	13.9 (0.8)

Note: Table displays the percentage of military personnel by Service and region who reported social and environmental influences on tobacco use. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of social and environmental influences are given in Section 2.7.4.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Attempted to Stop Smoking in Past 6 Months, Q65; Started Smoking Cigarettes since Joining, Q54; Successfully Quit Smoking since Joining, Q66; Uses Smokeless Tobacco because of Restrictions, Q77; Using Smokeless Is Easier than Going Outside, Q76).

3.2.4 Sociodemographic Correlates of Cigarette Quit Attempts and Quit Successes

Because of the importance in understanding smoking quit attempts and successes, these two issues were examined in greater detail by sociodemographic groups. Table 3.2.7 presents regional comparisons within sociodemographic subgroups regarding attempts to stop smoking cigarettes in the past 6 months. Results for all personnel show regional differences for the following demographic groups:

- males

- White, non-Hispanics
- married personnel with spouse present
- personnel in pay grades E4 through E6

For all of these groups, personnel in CONUS were significantly more likely to have attempted to quit smoking than their OCONUS counterparts. Each Service showed some demographic groups with CONUS-OCONUS differences, although the specific subgroups varied considerably. The Army showed differences for personnel who were married with their spouse present and personnel in pay grades E1 through E3 and E4

Table 3.2.7

Attempted to Stop Smoking Cigarettes, Past 6 Months, by Sociodemographic Characteristic, Service, and Region

Sociodemographic Characteristics	Service/Region								All Services	
	Army		Navy		Marine Corps		Air Force			
	CONUS ^a	OCONUS ^b	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS
Gender										
Male	27.4 (1.5)	25.9 (1.2)	24.1 (1.3) ⁴	20.2 (0.9) ³	29.9 (1.2)	27.1 (0.9)	14.7 (1.0) ⁸	19.3 (1.4) ⁷	25.9 (1.0) ¹⁰	22.1 (0.7) ⁹
Female	21.0 (4.2)	20.3 (3.3)	20.2 (2.1)	19.4 (1.6)	22.8 (2.8)	16.1 (2.5)	13.8 (1.8)	17.0 (2.1)	19.4 (2.4)	18.3 (1.3)
Race/Ethnicity										
White, non-Hispanic	29.1 (1.8)	27.4 (1.2)	28.3 (1.7) ⁴	20.9 (1.0) ³	33.2 (1.6) ⁶	24.3 (0.7) ⁵	15.6 (1.3) ⁸	20.3 (1.8) ⁷	27.4 (1.2) ¹⁰	22.4 (0.9) ⁹
African American, non-Hispanic	17.0 (1.8)	17.5 (1.9)	17.7 (1.3) ⁴	13.4 (1.2) ³	25.6 (3.2)	25.4 (3.4)	9.5 (1.3)	10.8 (1.8)	16.6 (1.3)	15.0 (1.0)
Hispanic	26.3 (2.9)	25.9 (2.7)	17.9 (1.7)	21.7 (2.3)	22.4 (1.5) ⁶	31.5 (2.3) ⁵	15.8 (1.9)	19.0 (1.7)	23.8 (1.8)	23.8 (1.3)
Other	30.8 (4.2)	27.8 (3.1)	20.3 (2.1)	22.3 (2.3)	25.6 (3.8)	26.9 (2.0)	15.4 (2.9)	18.3 (2.8)	27.9 (3.2)	23.0 (1.4)
Education										
High school or less	30.6 (2.0)	32.4 (1.2)	25.8 (1.3)	23.5 (1.5)	33.1 (1.3) ⁶	29.3 (1.3) ⁵	21.0 (2.0)	23.4 (1.5)	30.2 (1.4)	27.2 (0.7)
Some college	23.8 (1.6)	23.9 (1.3)	21.4 (1.4)	20.3 (1.0)	26.1 (1.3)	25.6 (0.6)	15.3 (0.9) ⁸	20.3 (1.0) ⁷	22.3 (1.1)	21.5 (0.6)
College graduate	13.6 (3.2)	9.1 (1.8)	18.0 (3.2) ⁴	9.2 (1.2) ³	7.0 (2.0)	11.3 (1.7)	8.3 (0.9)	8.2 (1.8)	11.2 (1.6)	8.9 (1.0)
Family Status										
Not married	26.7 (2.1)	28.4 (1.7)	23.7 (1.5)	22.8 (1.0)	30.1 (1.5)	27.4 (1.7)	15.4 (1.2) ⁸	22.5 (1.4) ⁷	25.6 (1.4)	24.9 (0.8)
Married, spouse not present	24.9 (3.6)	26.1 (2.1)	33.0 (2.8) ⁴	19.7 (1.9) ³	30.0 (3.5)	38.4 (5.7)	14.7 (5.0)	16.3 (1.8)	25.4 (2.8)	21.0 (1.2)
Married, spouse present	26.8 (1.7) ²	19.1 (1.5) ¹	20.4 (1.8)	17.0 (0.9)	27.7 (1.6) ⁶	22.5 (1.7) ⁵	13.9 (1.3)	16.6 (1.7)	24.3 (1.2) ¹⁰	17.9 (0.8) ⁹
Pay Grade										
E1–E3	29.3 (2.9) ²	36.0 (1.4) ¹	28.6 (1.9)	29.2 (2.0)	32.6 (1.6)	32.7 (2.1)	18.8 (1.7)	21.3 (3.3)	28.9 (1.7)	30.2 (1.1)
E4–E6	28.6 (1.7) ²	22.4 (1.5) ¹	22.1 (1.3)	19.6 (1.2)	29.8 (1.3)	28.3 (0.6)	17.4 (1.0) ⁸	22.1 (0.9) ⁷	27.0 (1.3) ¹⁰	22.1 (0.6) ⁹
E7–E9	13.4 (2.3)	14.6 (2.3)	12.1 (2.1)	14.8 (2.1)	9.7 (3.9)	8.5 (1.9)	8.5 (1.4)	9.0 (2.5)	12.0 (1.6)	11.6 (1.3)
W1–W5, O1–O6	10.0 (3.3)	8.0 (2.4)	14.9 (4.9)	9.1 (1.3)	7.3 (1.6)	8.5 (0.5)	7.3 (1.2)	5.1 (1.4)	8.8 (1.6)	7.0 (1.0)
Total	26.6 (1.5)	25.0 (1.2)	23.1 (1.2) ⁴	20.0 (0.9) ³	29.1 (1.1) ⁶	25.9 (0.6) ⁵	14.5 (0.9) ⁸	19.2 (1.3) ⁷	25.0 (1.0) ¹⁰	22.5 (0.5) ⁹

Note: Table displays the percentage of military personnel by sociodemographic characteristic, Service, and region who made a serious attempt to quit smoking cigarettes in the past 6 months. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of sociodemographic characteristics and attempted to stop smoking cigarettes in past 6 months are given in Sections 2.7.1 and 2.7.4, respectively.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Attempted to Stop Smoking Cigarettes, Past 6 Months, Q65).

through E6. The Navy showed differences for males; White, non-Hispanics; African American, non-Hispanics; college graduates; and personnel who were married with their spouse not present. The Marine Corps differences were among White, non-Hispanics; Hispanics; personnel with a high school education or less; and married personnel whose spouse was present.

Air Force differences were among males; White, non-Hispanics; personnel with some college; personnel who were not married; and personnel in pay grades E4 through E6. With two exceptions, CONUS personnel in the Army, Navy, and Marine Corps were more likely to have attempted to quit smoking cigarettes than their OCONUS counterparts. In contrast, Air Force OCONUS personnel were more likely to have attempted to quit smoking than their CONUS counterparts.

Table 3.2.8 presents the demographic breakout of personnel who succeeded in their efforts to quit cigarette smoking. For all Services, regional differences occurred for

- males,
- those with a high school education or less,
- those married with spouse present, and
- those in pay grades E4 through E6.

For all of these groups, OCONUS personnel were more likely to succeed than CONUS personnel.

Examination within the Services shows that the Army had no significant differences; the Navy showed differences for African American, non-Hispanics; those with some college; and those in pay grades E1 through E3. The Marine Corps showed differences for White, non-Hispanics and married personnel with spouse not present. The Air Force showed differences for males; White, non-Hispanics; those of “Other” race/ethnicity; those with a high school education or less or a college education; and those who were married with a spouse present. All except one of these comparisons showed that OCONUS personnel were more likely to be successful in quitting cigarette use than CONUS personnel. Taken together, the data on attempting to quit and succeeding in quitting point to installation

differences for both of these behaviors and suggest important regional differences. These differences are likely due to a variety of factors, including leader emphasis on smoking cessation, rates of smoking at the installations, and the number and quality of the cessation programs.

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Table 3.2.8

Successfully Quit Smoking Cigarettes Since Joining, by Sociodemographic Characteristic, Service, and Region

Sociodemographic Characteristics	Service/Region								All Services	
	Army		Navy		Marine Corps		Air Force			
	CONUS ^a	OCONUS ^b	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS	CONUS	OCONUS
Gender										
Male	8.3 (0.8)	6.6 (0.5)	9.3 (0.8)	11.2 (0.7)	8.9 (0.6)	9.6 (0.7)	8.3 (0.9) ⁸	11.8 (0.6) ⁷	8.4 (0.6) ¹⁰	10.1 (0.4) ⁹
Female	6.5 (1.9)	6.3 (1.7)	6.7 (1.0)	9.8 (1.4)	7.8 (1.3)	9.3 (1.4)	10.3 (1.6)	11.0 (2.0)	7.6 (1.2)	9.5 (1.1)
Race/Ethnicity										
White, non-Hispanic	10.0 (1.3)	7.9 (1.1)	10.3 (1.0)	12.2 (0.7)	8.9 (0.6) ⁶	11.3 (0.5) ⁵	10.1 (1.0) ⁸	13.0 (0.8) ⁷	9.9 (0.8)	11.6 (0.5)
African American, non-Hispanic	3.3 (1.0)	4.9 (1.4)	4.1 (1.0) ⁴	6.4 (0.7) ³	8.8 (2.6)	4.7 (1.3)	5.0 (1.6)	5.6 (1.3)	3.9 (0.8)	5.5 (0.7)
Hispanic	6.7 (1.4)	4.9 (1.4)	10.9 (1.5)	10.3 (1.8)	9.3 (1.1)	8.3 (0.5)	5.4 (1.8)	9.3 (2.7)	7.3 (0.9)	8.1 (1.0)
Other	8.2 (2.1)	7.5 (1.8)	10.8 (2.5)	12.1 (1.6)	5.4 (1.5)	8.9 (3.3)	6.7 (1.8) ⁸	14.2 (2.8) ⁷	7.9 (1.5)	11.2 (1.2)
Education										
High school or less	6.3 (0.9)	5.0 (0.6)	8.1 (0.7)	9.5 (0.8)	7.7 (0.7)	7.8 (0.6)	6.4 (1.4) ⁸	13.5 (2.2) ⁷	6.6 (0.7) ¹⁰	8.9 (0.7) ⁹
Some college	10.0 (1.3)	6.9 (1.0)	9.0 (0.9) ⁴	12.2 (0.9) ³	10.6 (1.0)	11.9 (1.4)	11.8 (1.2)	12.0 (1.0)	10.3 (0.9)	11.0 (0.6)
College graduate	8.6 (2.3)	9.2 (1.4)	11.4 (2.1)	10.1 (1.4)	9.0 (2.1)	10.8 (1.5)	4.6 (0.9) ⁸	8.5 (1.2) ⁷	7.3 (1.2)	9.2 (0.7)
Family Status										
Not married	6.0 (0.9)	5.0 (0.8)	6.9 (0.8)	7.9 (0.5)	8.5 (0.6)	8.7 (0.6)	6.5 (0.9)	8.9 (1.2)	6.5 (0.6)	7.6 (0.5)
Married, spouse not present	7.7 (2.2)	3.7 (0.9)	6.6 (1.6)	7.7 (1.8)	7.6 (2.2) ⁶	2.2 (1.1) ⁵	8.5 (4.5)	11.1 (1.3)	7.7 (1.8)	7.9 (0.8)
Married, spouse present	10.0 (1.1)	10.4 (1.3)	12.6 (1.3)	15.1 (0.8)	9.8 (1.0)	11.7 (1.2)	10.4 (1.0) ⁸	14.5 (0.7) ⁷	10.2 (0.8) ¹⁰	13.5 (0.5) ⁹
Pay Grade										
E1–E3	5.0 (1.1)	3.0 (0.6)	4.0 (0.7) ⁴	6.8 (1.2) ³	6.5 (0.7)	7.6 (0.8)	4.4 (1.2)	5.2 (2.7)	5.2 (0.7)	5.1 (0.8)
E4–E6	8.1 (1.0)	7.7 (0.9)	10.6 (0.8)	11.6 (0.7)	10.4 (0.8)	10.0 (0.4)	10.6 (1.1)	12.3 (1.0)	8.8 (0.7) ¹⁰	10.9 (0.5) ⁹
E7–E9	11.4 (3.3)	8.5 (2.3)	15.5 (1.9)	15.0 (1.9)	17.7 (5.4)	13.5 (2.2)	16.7 (2.4)	21.1 (3.2)	13.1 (2.3)	16.3 (1.6)
W1–W5, O1–O6	13.0 (3.2)	11.7 (2.7)	11.6 (3.1)	9.7 (1.2)	10.4 (2.6)	11.2 (1.6)	3.2 (0.9)	7.4 (1.9)	8.7 (1.8)	9.3 (1.3)
Total	8.1 (0.8)	6.6 (0.5)	9.1 (0.7) ⁴	11.0 (0.6) ³	8.8 (0.5)	8.2 (0.5)	8.9 (0.8) ⁸	11.6 (0.7) ⁷	8.4 (0.6)	9.5 (0.3)

Note: Table displays the percentage of military personnel by sociodemographic characteristic, Service, and region who successfully stopped smoking cigarettes since joining the military. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of sociodemographic characteristics and successfully quit smoking since joining the military are given in Sections 2.7.1 and 2.7.4, respectively.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Successfully Quit Smoking since Joining, Q66).

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3.3 Culture of Alcohol and Tobacco Use

This section explores the effect of military culture on alcohol and tobacco use by considering the impact of

installation-level influences such as administrative/policy influences and perceived norms on the use of alcohol and tobacco. In this context, culture is defined as a set of customs and behaviors shared by groups of people at the installation level. Installation-level influences may include (a) norms regarding the acceptability of alcohol and tobacco use, (b) installation enforcement of military policy on alcohol and tobacco use, (c) prevailing attitudes toward alcohol and tobacco use, (d) alcohol availability, (e) access to alternative activities, (f) isolation and mission of the installation, and (g) associated culture and norms.

There are many definitions of culture. Some suggest that culture is what naturally emerges as individuals transform themselves into social groups, such as military units. Louis (1980) defined culture as a set of understandings shared by a group that are clearly relevant and distinctive to the particular group and passed on to new members. Schein (1988) suggested that an organization's culture develops to help it cope with stress. The military culture of alcohol and tobacco use may have developed to help personnel cope with the boredom of daily routine, as well as the stress associated with warfare and rigid hierarchy. Schein (1988) also described three levels of culture: (1) behavior and artifacts (i.e., the observable level of culture, such as behavior patterns, dress, etc., tell us what a group is doing, not why it is doing it), (2) values or underlying beliefs that largely determine behavior, and (3) assumptions and beliefs that may grow out of values and form the true foundation of a culture. Schein reported that an organization may have many different cultures or subcultures, or even no discernible dominant culture at the organizational level. To understand influences affecting alcohol and tobacco use, all three levels of culture must be understood. To be successful in changing culture, strategies must take into account the organization's culture.

The negative impact of alcohol use and abuse by the military has been a concern for decades. The issue is particularly of significance given the need for a high level of force combat readiness and peak performance. The military has responded to alcohol, drug, and tobacco problems by instituting a series of directives to address

substance abuse among its personnel. The military understands that the culture of alcohol and tobacco use is, to some extent, created and supported by its leaders and, in response, has provided targeted training and educational programs for its leaders to address substance use issues among military personnel.

A variety of alcohol prevention programs have been developed to reduce abuse, including review and improvements in existing programs, inclusion of alcohol abuse prevention materials in health promotion programs, promotion of responsible drinking, and development of pilot programs designed to decrease alcohol abuse (Bray et al., 2006). The 1990s also saw the strengthening of tobacco prevention programs and restrictions, including prohibition of smoking in military buildings and during basic training, as well as decreased discounting of cigarettes in commissaries.

Although the use of alcohol declined among members of each of the Service branches until 1998, the recent DoD Surveys of Health Related Behaviors (Bray et al., 2006) reported that use has begun to increase among each of the branches individually and overall. Bray and colleagues (2005) found that personnel stationed in Asia were more likely to be heavy drinkers than those stationed in Europe, CONUS, or Hawaii, but could not determine the reasons for the differences.

Studies of risk factors for substance use in civilian populations may be instructive, but how these findings translate to the military population is unknown. Environmental factors such as “happy hours,” distance to retail outlets, and availability of alcohol are important correlates of drinking behavior (Hawkins, Catalano, & Miller, 1992; Gruenewald, Remer, & Lipton, 2002) in civilian populations. These studies suggest that both individual and environmental factors promoting access to alcohol or enhancing norms regarding alcohol use are important correlates of heavy drinking.

Additional studies suggest that some recruits who drink and/or smoke may self-select to enlist because they have a set of expectancies about the military culture of drinking and smoking. Ames and colleagues (2002), in a study of the pre-enlistment substance use of Navy

recruits, reported that alcohol, tobacco, and drug use are frequently reported, with male recruits having higher rates of heavy alcohol use. They also reported that normative beliefs about drinking were a strong predictor of any preenlistment substance use. With regard to smoking, Weaver and colleagues (1998) examined the possibility that young women recruited to the Navy had significantly higher rates of current and heavy smoking than their civilian counterparts and suggested that the Navy may attract young women who are smokers.

A recent study of military culture and drinking behavior in Navy careerists (Ames et al., 2007) reported an association between normative beliefs on liberty drinking behavior and factors of the work culture, including an ambivalent alcohol policy, work problems, occupational stress, and length of deployment even after adjusting for age, ethnicity, education, and marital status. Ames and colleagues (2004) found that young sailors felt that drinking with coworkers during the work week was an appropriate coping mechanism in response to stress, boredom, loneliness, and lack of other recreational activities. The respondents described heavy and binge drinking behavior after work, and, in particular, drinking on liberty during deployment, as part of a cultural tradition in the Navy. Ames and colleagues (2007) suggested that the cultural and environmental obstacles to preventing alcohol abuse include the belief that problem drinking is an individual choice rather than a result of the Naval working environment and traditions.

During focus groups held at both CONUS and OCONUS bases, personnel at certain installations reported that they had been told in advance of changing duty stations that some installations were known to support heavy drinking. Clearly, the extent to which normative beliefs support and promote a culture supportive of heavy alcohol use should be further examined.

The work of Bachman and colleagues (1999) suggested that DoD tobacco directives may be modifying recruit expectancies of tobacco use. They examined trends in life-course trajectories of high school seniors surveyed as part of the Monitoring the Future Survey over several decades and reported that substance use patterns of

military recruits once they join the military may be changing. They reported that recent cohorts of military recruits were no longer disproportionately smokers of a half-pack per day before they left high school. Although smoking increased when people enlisted, their rate of increase was similar to that of the high school graduating population at follow-up.

3.3.1 *Administrative/Policy Influences on Alcohol Use, by Service and Region*

The unadjusted estimates presented in this report are descriptive only and yield no explanatory information about differences among Services. Table 3.3.1 provides estimates of the influence of administrative and policy influences on alcohol use by Service and region.

Focusing on military personnel living in barracks/dormitories, questions were posed about the amount of alcohol permitted in the barracks, because it was assumed that the barracks present the easiest area for monitoring alcohol use. For all Services, significant differences were found for the amount of alcohol permitted in the barracks, with personnel at OCONUS bases being more likely to report that some type of alcohol was permitted in barracks/dormitories. OCONUS personnel living in barracks were significantly more likely to have a six-pack of beer (66.9%) or a case of beer or a bottle of liquor (54.7%) in their room than those who lived at CONUS regions (61.3% and 41.7%, respectively). It is notable that nearly twice as many respondents living in OCONUS barracks/dormitories (34.8%) indicated that there was no limit on the amount of alcohol permitted in the barracks/dormitories compared with CONUS military personnel living on base (19.2%). This suggests that different underlying assumptions may support the culture of alcohol use in OCONUS bases.

The trend for significantly more OCONUS personnel reporting no limit on alcohol permitted in the barracks held constant for all Service branches except the Marine Corps. Air Force respondents living in dormitories reported the highest rates for no limit on alcohol (57.5%). The Marine Corps respondents had the highest percentage reporting that a six-pack of beer was permitted in the barracks (84.8%) and the lowest

percentage reporting that there was no limit on alcohol (3.6%).

Respondents' perceptions of alcohol policy enforcement in the barracks are also presented in Table 3.3.1. Overall, 27.3% of military personnel living in barracks reported that the policy on alcohol was enforced by routine/regular inspection or room checks. Significant differences for routine inspections were reported by Navy, Marine Corps, and Air Force personnel, with those living on CONUS bases reporting higher rates of inspection. For all Services, significantly more personnel living on OCONUS bases reported that the alcohol policy was not enforced in the barracks/dormitories.

All respondents were asked if the fear of military consequences and/or command influence were factors in limiting the amounts of alcohol they drank. Overall, 16.0% of military personnel indicated that they limited their use of alcohol out of fear of military consequences, and 5.7% limited their use of alcohol in response to command influences. Of the Services, Navy personnel living on OCONUS bases reported the highest rates of limiting their alcohol consumption because of command influences (9.0%). Significantly more respondents living at OCONUS bases indicated that both these factors limited their use.

3.3.2 *Culture of Drinking, by Service and Region*

The culture of alcohol use in the military is reflected in perceived norms about the acceptability of use and encouragement to use alcohol. Respondents were asked to indicate if they "agreed" or "strongly agreed" with the following statements about the acceptability of consuming alcohol: (1) it's hard to fit in if you don't drink, (2) drinking is part of being at this installation, (3) drinking is part of being in the military, (4) drinking is the only recreation available, (5) I am encouraged to drink at this installation, and (6) nonalcoholic beverages are not always available at social functions. Table 3.3.2 displays the perceived norms of installation personnel on alcohol consumption in each Service, by region. For all Services, significant differences were found between

Table 3.3.1

Administrative/Policy Influences on Alcohol Use, by Service and Region

Service/Region	Amount of Alcohol Permitted in Barracks ^a			Alcohol Policy Enforcement in Barracks ^a		Influences	
	Six-pack of Beer	Case of Beer/Bottle of Liquor	No Limit on Alcohol	Routine/Regular Inspection	Not Enforced	Fear of Military Consequences	Command Influences
Army							
CONUS ^b	58.3 (3.1) ²	48.6 (2.5)	21.0 (3.1) ²	23.1 (3.2)	27.7 (3.5)	14.7 (0.7) ²	5.2 (0.5) ²
OCONUS ^c	72.0 (2.2) ¹	54.9 (2.2)	13.5 (1.9) ¹	23.8 (1.6)	25.1 (1.9)	18.4 (0.8) ¹	8.4 (0.6) ¹
Total	60.9 (2.5)	49.8 (2.0)	19.6 (2.6)	23.3 (2.6)	27.2 (2.8)	15.1 (0.7)	5.6 (0.5)
Navy							
CONUS	33.8 (6.7) ⁵	21.9 (4.5) ⁵	19.8 (3.7) ⁵	53.4 (5.1) ⁵	12.0 (2.3) ⁵	21.3 (1.0)	8.4 (0.6)
OCONUS	58.4 (1.8) ⁴	65.3 (3.2) ⁴	61.1 (3.3) ⁴	29.6 (3.5) ⁴	40.5 (3.1) ⁴	21.1 (0.7)	9.0 (0.4)
Total	47.6 (3.6)	46.3 (4.5)	43.0 (4.2)	40.1 (3.7)	27.9 (3.0)	21.2 (0.6)	8.7 (0.4)
Marine Corps							
CONUS	82.9 (2.7) ⁸	21.3 (1.7)	3.6 (0.6)	37.8 (2.7) ⁸	9.6 (1.3)	16.2 (1.2)	5.5 (0.5)
OCONUS	91.3 (1.8) ⁷	22.2 (1.8)	3.8 (1.0)	29.3 (2.8) ⁷	12.8 (1.7)	15.7 (0.4)	6.7 (0.4)
Total	84.8 (2.1)	21.5 (1.4)	3.6 (0.5)	35.9 (2.2)	10.3 (1.2)	15.9 (0.6)	6.1 (0.3)
Air Force							
CONUS	45.1 (2.6) ¹¹	51.9 (3.1) ¹¹	51.9 (3.1) ¹¹	31.1 (2.2) ¹¹	18.5 (1.7) ¹¹	15.7 (0.8)	4.4 (0.5)
OCONUS	54.2 (2.6) ¹⁰	63.8 (2.7) ¹⁰	59.9 (2.5) ¹⁰	21.8 (1.8) ¹⁰	39.3 (2.8) ¹⁰	16.0 (0.8)	4.2 (0.5)
Total	51.4 (2.1)	60.1 (2.2)	57.5 (2.0)	24.6 (1.6)	33.0 (2.3)	15.8 (0.6)	4.3 (0.3)
All Services							
CONUS	61.3 (2.2) ¹⁴	41.7 (2.0) ¹⁴	19.2 (2.2) ¹⁴	28.3 (2.2)	22.6 (2.4) ¹⁴	15.4 (0.5) ¹⁴	5.3 (0.4) ¹⁴
OCONUS	66.9 (1.6) ¹³	54.7 (2.1) ¹³	34.8 (2.7) ¹³	24.8 (1.2)	30.5 (1.6) ¹³	17.4 (0.4) ¹³	6.7 (0.3) ¹³
Total	63.0 (1.6)	45.6 (1.4)	23.9 (1.7)	27.3 (1.6)	25.0 (1.7)	16.0 (0.4)	5.7 (0.3)

Note: Table displays the percentage of military personnel by Service and region reporting amount of alcohol permitted in the barracks, alcohol policy enforcement in the barracks, and installation factors that limit alcohol consumption. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of administrative/policy influences on alcohol use are given in Section 2.7.6.

^aLimited to personnel living in barracks/dormitory.

^bRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^cRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Amount of Alcohol Permitted in Barracks, Q17; Alcohol Policy Enforcement in Barracks, Q13 and Q18; Military Consequences Limit Drinking, Q40d; Command Influences Limit Drinking, Q40i).

Table 3.3.2 Culture of Drinking, by Service and Region

Service/Region	Perceived Drinking Norms					Nonalcoholic Beverages Not Always Available
	Hard to Fit In	Part of This Installation	Part of the Military	Only Recreation Available	Encouraged to Drink	
Army						
CONUS ^a	12.3 (1.1) ²	15.4 (1.4) ²	36.2 (1.7)	13.2 (1.1) ²	18.1 (1.5) ²	15.7 (1.1)
OCONUS ^b	19.8 (1.5) ¹	31.1 (1.6) ¹	34.3 (1.3)	26.5 (1.5) ¹	24.4 (1.4) ¹	17.6 (0.9)
Total	13.1 (0.9)	17.1 (1.3)	36.0 (1.5)	14.6 (1.0)	18.7 (1.3)	15.9 (1.0)
Navy						
CONUS	10.8 (0.9)	9.9 (0.9) ⁵	29.3 (1.3)	10.8 (0.9)	16.0 (0.8)	15.3 (0.7) ⁵
OCONUS	13.3 (1.0)	18.1 (1.3) ⁴	31.7 (1.0)	11.3 (1.2)	17.6 (1.1)	12.9 (0.7) ⁴
Total	12.2 (0.7)	14.6 (0.9)	30.7 (0.8)	11.1 (0.8)	16.9 (0.7)	14.0 (0.5)
Marine Corps						
CONUS	17.9 (0.8) ⁸	22.2 (1.2) ⁸	42.1 (1.8)	16.2 (1.0) ⁸	28.4 (1.5)	18.5 (0.9)
OCONUS	21.5 (0.9) ⁷	29.8 (1.1) ⁷	39.9 (0.9)	20.8 (1.4) ⁷	29.9 (1.1)	17.3 (0.6)
Total	19.7 (0.6)	26.1 (0.9)	41.0 (1.0)	18.5 (0.9)	29.2 (0.9)	17.9 (0.6)
Air Force						
CONUS	12.4 (1.2) ¹¹	16.1 (1.5) ¹¹	33.0 (1.3)	10.1 (1.5)	20.3 (1.8) ¹¹	13.4 (1.0)
OCONUS	19.6 (1.0) ¹⁰	29.3 (1.9) ¹⁰	32.0 (0.8)	12.9 (1.0)	25.5 (1.5) ¹⁰	12.7 (0.7)
Total	15.8 (0.8)	22.3 (1.2)	32.6 (0.8)	11.4 (0.9)	22.8 (1.2)	13.0 (0.6)
All Services						
CONUS	12.9 (0.7) ¹⁴	16.0 (1.0) ¹⁴	36.1 (1.2)	13.0 (0.8) ¹⁴	19.6 (1.1) ¹⁴	15.7 (0.8)
OCONUS	19.0 (0.6) ¹³	27.6 (0.8) ¹³	34.8 (0.6)	17.6 (0.7) ¹³	25.1 (0.7) ¹³	15.1 (0.4)
Total	14.7 (0.5)	19.5 (0.8)	35.7 (0.8)	14.3 (0.6)	21.2 (0.8)	15.5 (0.6)

Note: Table displays the percentage of military personnel by Service and region who indicated that they “agreed” or “strongly agreed” with statements about the acceptability of consuming alcohol. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of perceived drinking norms are given in Section 2.7.6.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Perceived Drinking Norms, Q19a–g).

respondents at CONUS and OCONUS bases regarding a number of perceived drinking norms. Personnel living on OCONUS bases were significantly more likely than those living on CONUS bases to report that it was hard to fit in at their installation if they did not drink alcohol (19.0% vs. 12.9%). With the exception of respondents in the Navy, significantly more OCONUS than CONUS personnel indicated that it was harder to fit in if they did not drink.

Overall, respondents on OCONUS bases were significantly more likely to report that drinking was part of being at their current installation (27.6% vs. 16.0%), was the only recreation available (17.6% vs. 13.0%), and that drinking was encouraged (25.1% vs. 19.6%). The belief that drinking was part of being in the military was endorsed by 35.7% of respondents overall, but differences by region were not observed. Although Marine Corps respondents were more likely to endorse the statement that drinking was part of being at their installation (26.1%), they were the only Service respondents not reporting significant differences between CONUS and OCONUS bases.

3.3.3 *Location of Drinking on Base, by Service and Region*

Identification of places where on-base drinking occurred provides important information about the drinking culture of the installation. Table 3.3.3 suggests that the location where most on-base drinking occurred was in on-base housing, with 13.8% reporting drinking in the barracks/dormitories and 13.2% in on-base housing. Except for respondents from the Navy, significantly more respondents from OCONUS bases compared with CONUS bases reported drinking in enlisted clubs, officers' clubs, or other on-base clubs.

3.3.4 *Location of Drinking off Base, by Service and Region*

Table 3.3.4 provides information about the off-base locations where military members "always" or "usually" drank. As was the case for on-base drinking, the highest rates were reported for drinking at off-base housing (29.6%) and bars (26.6%). For all Services, a greater

percentage of respondents on CONUS bases reported that they always or usually drank at off-base housing rather than at other locations. Significantly more OCONUS-based respondents reported that they always or usually drank at a bar when they drank off base (33.1% vs. 23.9%, respectively).

3.3.5 *Perceived Availability and Acceptability of Tobacco Use, by Service and Region*

Table 3.3.5 displays the percentage of military personnel in each Service by region who indicated that they "agreed" or "strongly agreed" with statements about availability and acceptability of tobacco products, namely (a) availability of tobacco products makes it easy to smoke, (b) most of my friends in the military use tobacco products, and (c) smoking is part of being in the military. Overall, 57.3% indicated that the availability of tobacco products at their installation made it easy to smoke, with significantly more personnel stationed at CONUS bases reporting friends in the military who used tobacco products than personnel living in OCONUS regions (62.7% vs. 58.5%, respectively). Only 26.7% of military personnel endorsed the statement that smoking or using other tobacco products was part of being in the military. Significantly more personnel living in CONUS regions reported that they felt smoking or using other tobacco products was part of being in the military.

3.3.6 *References*

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Table 3.3.3 Location of Drinking on Base, by Service and Region

Service/Region	Location of Drinking on Base					
	Barracks	Enlisted Club	Officers' Club	Other On-Base Club	Recreational Facility	On-Base Housing
Army						
CONUS ^a	13.1 (1.4) ²	2.3 (0.4) ²	1.2 (0.3) ²	2.2 (0.4) ²	4.6 (0.7)	14.7 (1.1)
OCONUS ^b	25.9 (1.6) ¹	9.1 (0.9) ¹	2.3 (0.3) ¹	6.8 (0.7) ¹	5.9 (0.5)	13.1 (0.9)
Total	14.5 (1.2)	3.1 (0.3)	1.3 (0.2)	2.7 (0.3)	4.7 (0.6)	14.6 (1.0)
Navy						
CONUS	6.2 (0.9) ⁵	2.5 (0.7)	1.5 (0.4)	2.5 (0.6)	4.8 (0.6)	4.6 (0.5) ⁵
OCONUS	10.5 (1.6) ⁴	4.4 (0.8)	1.0 (0.2)	3.8 (0.6)	5.4 (0.7)	16.7 (0.9) ⁴
Total	8.6 (1.0)	3.6 (0.5)	1.2 (0.2)	3.2 (0.4)	5.2 (0.5)	11.5 (0.8)
Marine Corps						
CONUS	18.9 (1.0) ⁸	2.2 (0.3) ⁸	1.3 (0.2) ⁸	1.9 (0.3) ⁸	6.1 (0.5) ⁸	11.6 (0.8) ⁸
OCONUS	26.6 (1.2) ⁷	14.2 (0.8) ⁷	2.8 (0.3) ⁷	6.1 (0.5) ⁷	8.7 (0.6) ⁷	16.9 (0.8) ⁷
Total	22.8 (0.8)	8.3 (0.7)	2.1 (0.2)	4.0 (0.3)	7.4 (0.4)	14.3 (0.6)
Air Force						
CONUS	3.8 (0.6) ¹¹	1.4 (0.3) ¹¹	1.5 (0.3) ¹¹	1.6 (0.4) ¹¹	3.1 (0.4) ¹¹	5.2 (0.6) ¹¹
OCONUS	8.8 (1.3) ¹⁰	6.2 (0.9) ¹⁰	0.6 (0.2) ¹⁰	7.4 (1.0) ¹⁰	4.9 (0.6) ¹⁰	13.6 (1.2) ¹⁰
Total	6.1 (0.7)	3.6 (0.4)	1.1 (0.2)	4.4 (0.6)	4.0 (0.4)	9.2 (0.8)
All Services						
CONUS	12.1 (0.9) ¹⁴	2.2 (0.2) ¹⁴	1.3 (0.2)	2.1 (0.3) ¹⁴	4.6 (0.5) ¹⁴	12.3 (0.8) ¹⁴
OCONUS	17.8 (0.8) ¹³	8.8 (0.5) ¹³	1.7 (0.2)	6.2 (0.4) ¹³	6.3 (0.3) ¹³	15.1 (0.6) ¹³
Total	13.8 (0.7)	4.2 (0.3)	1.4 (0.1)	3.3 (0.2)	5.1 (0.3)	13.2 (0.6)

Note: Table displays the percentage of military personnel by Service and region who reported that they "always" or "usually" drank at on-base locations. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of drinking location are given in Section 2.7.6.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Location of Drinking on Base, Q39a-f).

Table 3.3.4

Location of Drinking Off Base, by Service and Region

Service/Region	Location of Drinking off Base					
	Off-Base Housing	Bar	Restaurant	Hotel Room	Public Location	Recreational Facility
Army						
CONUS ^a	31.2 (1.8) ²	22.4 (1.7) ²	17.5 (1.3) ²	7.3 (0.8) ²	5.0 (0.7)	7.4 (0.9)
OCONUS ^b	18.1 (0.9) ¹	37.0 (1.4) ¹	21.8 (1.2) ¹	11.7 (0.8) ¹	5.2 (0.5)	6.5 (0.5)
Total	29.8 (1.6)	23.9 (1.5)	18.0 (1.2)	7.8 (0.7)	5.1 (0.6)	7.3 (0.8)
Navy						
CONUS	38.2 (1.2) ⁵	25.6 (1.0)	18.8 (0.8)	9.4 (1.0) ⁵	6.3 (0.7)	8.4 (0.6)
OCONUS	26.8 (0.8) ⁴	26.2 (1.1)	20.1 (1.5)	6.3 (0.6) ⁴	6.3 (0.6)	6.9 (0.6)
Total	31.7 (0.9)	26.0 (0.7)	19.5 (0.9)	7.7 (0.6)	6.3 (0.5)	7.6 (0.5)
Marine Corps						
CONUS	37.1 (1.4) ⁸	33.6 (1.8) ⁸	24.5 (1.2)	13.2 (0.8)	9.9 (0.6)	10.8 (0.8)
OCONUS	14.8 (1.3) ⁷	41.4 (1.5) ⁷	24.2 (1.0)	11.9 (0.6)	11.2 (0.6)	9.9 (0.4)
Total	25.9 (1.1)	37.6 (1.1)	24.4 (0.8)	12.6 (0.5)	10.6 (0.4)	10.3 (0.4)
Air Force						
CONUS	38.7 (1.0) ¹¹	22.0 (1.4)	15.5 (0.9)	4.8 (0.4)	3.0 (0.4)	6.1 (0.6)
OCONUS	23.5 (1.2) ¹⁰	26.9 (2.0)	15.4 (0.9)	5.1 (0.5)	2.5 (0.2)	4.8 (0.4)
Total	31.6 (1.0)	24.3 (1.2)	15.4 (0.6)	4.9 (0.3)	2.8 (0.2)	5.5 (0.4)
All Services						
CONUS	33.4 (1.2) ¹⁴	23.9 (1.2) ¹⁴	18.2 (0.9)	7.8 (0.5)	5.4 (0.5)	7.7 (0.6)
OCONUS	20.5 (0.6) ¹³	33.1 (0.9) ¹³	20.2 (0.6)	8.7 (0.4)	6.4 (0.3)	7.1 (0.3)
Total	29.6 (0.9)	26.6 (0.9)	18.8 (0.7)	8.1 (0.4)	5.7 (0.3)	7.5 (0.4)

Note: Table displays the percentage of military personnel by Service and region who reported that they “always” or “usually” drank at off-base locations. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of drinking location are given in Section 2.7.6.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Location of Drinking off Base, Q39g-1).

Table 3.3.5

Culture of Tobacco Use, by Service and Region

Service/Region	Perceived Availability and Acceptability		
	Availability Makes It Easy to Smoke	Most Military Friends Use Tobacco Products	Smoking Is Part of Being in the Military
Army			
CONUS ^a	59.6 (1.7)	66.8 (1.7)	30.8 (1.4)
OCONUS ^b	58.0 (1.2)	64.8 (1.7)	29.2 (1.1)
Total	59.4 (1.5)	66.6 (1.5)	30.6 (1.3)
Navy			
CONUS	50.1 (1.2) ⁵	57.2 (1.7)	22.9 (0.8)
OCONUS	56.3 (1.2) ⁴	56.4 (2.0)	22.5 (1.1)
Total	53.6 (0.8)	56.7 (1.4)	22.6 (0.7)
Marine Corps			
CONUS	61.2 (1.1)	70.7 (1.4) ⁸	26.7 (1.1)
OCONUS	60.6 (0.9)	63.9 (2.0) ⁷	26.5 (0.8)
Total	60.9 (0.7)	67.3 (1.4)	26.6 (0.7)
Air Force			
CONUS	49.3 (1.0)	39.3 (2.9) ¹¹	16.5 (1.1) ¹¹
OCONUS	51.5 (1.0)	50.6 (2.0) ¹⁰	20.6 (0.8) ¹⁰
Total	50.3 (0.7)	44.6 (1.8)	18.4 (0.7)
All Services			
CONUS	57.7 (1.1)	62.7 (1.2) ¹⁴	27.7 (1.0) ¹⁴
OCONUS	56.4 (0.5)	58.5 (1.0) ¹³	24.4 (0.5) ¹³
Total	57.3 (0.8)	61.5 (0.9)	26.7 (0.7)

Note: Table displays the percentage of military personnel by Service and region who indicated that they “agreed” or “strongly agreed” with statements about availability and acceptability of tobacco products. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of perceived availability and acceptability are given in Section 2.7.6.

^aRefers to personnel who were stationed within the 48 contiguous states in the continental United States.

^bRefers to personnel who were stationed outside the continental United States.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Perceived Availability and Acceptability, Q67a–c).

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3.4 Summary

3.4.1 Alcohol Use

Findings from the 2005 DoD Survey of Health Related Behaviors indicated a continuing pattern of increases in alcohol consumption and heavy drinking rates. The present survey, although administered to a select set of installations, revealed a similar pattern of use among military personnel.

3.4.1.1 Alcohol Use, by Service and Region

Observed differences in alcohol use and heavy drinking were shown by region (Table 3.1.1).

- More than 75% of all personnel acknowledged past-month alcohol use.
- Unadjusted rates were lowest among Army and Air Force personnel and highest among Marine Corps personnel.
- Prevalence rates for past-month alcohol use were generally higher at OCONUS locations.
- Navy personnel showed significantly lower OCONUS daily alcohol consumption compared with CONUS bases.
- CONUS versus OCONUS comparisons revealed a significantly larger number of drinks being consumed by Army and Air Force personnel.
- Nearly 60% of Marine Corps personnel reported feeling drunk two or more times in the past month.

3.4.1.2 Problem Drinking Levels, by Service and Region

Problem drinking levels were measured by the AUDIT survey, which yields hazardous, harmful, and possible dependence levels (Table 3.1.2).

- Hazardous drinking levels and possible dependence rates were higher for OCONUS than CONUS Army personnel.
- Air Force personnel reported the lowest prevalence rate of hazardous and harmful drinking levels, as well as possible dependence.
- For all Services, rates for drinking at hazardous levels or above were higher for OCONUS versus CONUS bases.

3.4.1.3 Negative Effects of Alcohol Use, by Service and Region

The survey measured negative effects of alcohol use in terms of serious consequences, productivity loss, and having experienced administrative action (Table 3.1.3).

- Marine Corps personnel showed the highest rates for all types of negative effects.
- Rates for all three types of negative effects were lowest among Air Force personnel.
- OCONUS Army personnel acknowledged a higher rate of experiencing three or more serious consequences than did CONUS Army personnel.
- The findings for Navy personnel were reversed, with a larger percentage of CONUS personnel experiencing three or more serious consequences compared with OCONUS personnel.

3.4.1.4 Correlates of Problem Drinking Levels and Negative Effects of Alcohol Use

Surveys of military and civilian populations have established certain patterns among sociodemographic groups that are useful in targeting prevention and treatment efforts. Problem drinking rates and negative effects were greater among the following groups (Tables 3.1.4 to 3.1.7):

- males compared with females
- those with a high school education or less
- personnel at OCONUS versus CONUS locations
- persons who were single or married without a spouse present
- those in pay grades E1 to E3

Also, binge drinking rates were highest among OCONUS, single, Marine Corps personnel.

3.4.1.5 *Correlates of Alcohol Use and Heavy Alcohol Consumption*

Sociodemographic characteristics revealed the following findings with respect to alcohol use and heavy drinking (Tables 3.1.8 and 3.1.9).

- Overall, alcohol consumption was highest among CONUS and OCONUS Marine Corps personnel.
- Personnel having a high school education or less showed the heaviest consumption patterns across all Services.
- For all branches except the Navy, the trend was for heavier consumption at OCONUS bases.
- Heavy drinking rates were significantly higher among OCONUS males in the Army and Air Force compared with CONUS males in those Service branches.

3.4.2 *Tobacco Use*

Tobacco use is common among active-duty military personnel despite its known negative consequences for health and readiness. The participating installations in this study provided insights into the role of installation-level influences on tobacco use.

3.4.2.1 *Tobacco Use, by Service and Region*

- Rates of tobacco use in the past 30 days were relatively high among participating installations: 39.2% for any cigarette use, 35.1% for daily cigarette use, 16.6% for smokeless tobacco use, and 30.8% for cigar use.
- Rates of any cigarette use and daily cigarette use were higher for CONUS (40.5% and 36.5%, respectively) than for OCONUS (36.1% and 32.0%, respectively) participating installations. There were no overall CONUS-OCONUS differences for smokeless tobacco use or cigar use.

There were a number of CONUS-OCONUS differences within demographic groups for the different types of tobacco use: CONUS males; persons of White, non-Hispanic or “Other” race/ethnicity; personnel with a high school education or less; personnel in pay grades E4 through E6; and personnel married with a spouse present were more likely than their OCONUS counterparts to engage in any cigarette use.

3.4.2.2 *Nicotine Dependence among Cigarette Smokers*

- Among smokers, the majority of personnel had low levels of dependence; those in CONUS (where smoking rates were higher for this sample of installations) were more likely to have higher rates of nicotine dependence.

3.4.2.3 *Social and Environmental Influences on Tobacco Use, by Service and Region*

- Social and environmental influences indicated that 24.2% had attempted to stop smoking cigarettes in the last 6 months, about one-fifth of personnel (20.4%) had begun smoking since joining the military, and less than one-tenth of smokers (8.7%) had quit successfully since joining.
- Few personnel reported that they had switched to smokeless tobacco because of restrictions on cigarette use (6.4%). However, 13.9% noted that they used smokeless tobacco because they could do so indoors.

3.4.2.4 *Sociodemographic Correlates of Cigarette Quit Attempts and Quit Successes*

- Overall results for attempts to stop smoking cigarettes showed CONUS-OCONUS differences for the following demographic groups: males; White, non-Hispanics; those married with a spouse present; and pay grades E4 through E6. For all of these groups, personnel in CONUS were significantly more likely to have attempted to quit smoking than their OCONUS counterparts.
- Personnel most likely to succeed in their efforts to quit cigarette smoking for all Services were males, those with a high school education or less, those married with a spouse present, and those in pay grades E4 through E6. For all of these groups, OCONUS personnel were more likely to succeed than CONUS personnel.

3.4.3 *Culture of Alcohol and Tobacco Use*

3.4.3.1 *Administrative/Policy Influences on Alcohol Use, by Service and Region*

- In all Services, respondents living in the barracks/dormitories at OCONUS bases were more likely to have access to alcohol products, with 66.9% of those living at OCONUS bases reporting that they were permitted to have beer or some type of alcohol in their barracks compared with 61.3% of those living at CONUS bases.

- Nearly 35% of those living in barracks on OCONUS bases reported no limit on alcohol permitted in their barracks, a factor which may bolster underlying assumptions that alcohol use is more acceptable when living on OCONUS bases. This is further reinforced by lower rates of inspection for those living on OCONUS bases (24.8%) versus CONUS bases (28.3%).
- There was low perception of alcohol policy enforcement in the barracks. This was especially true for those living on OCONUS bases, where 30.5% reported that alcohol policy in the barracks was not enforced. For those living on CONUS bases, 22.6% reported that alcohol policies were not enforced in the barracks.
- Only a small percentage of respondents indicated that they limited their use of alcohol because of fear of military consequences. Navy respondents were more apt to report this as a limiting factor to alcohol consumption.

3.4.3.2 *Culture of Drinking, by Service and Region*

- It is encouraging to note that only 35.7% of respondents endorsed the statement that “drinking is part of being in the military”; significant differences were not reported by region.
- A small but significant percentage of OCONUS respondents agreed with statements that they drink to fit in, because it is part of life at this installation, it is the only recreation available, and they are encouraged to drink.
- Alcohol consumption appears to be more of an expected behavior on OCONUS bases. Military leadership at these installations may hold an underlying set of assumptions that drinking is part of the culture of being in the military overseas.

3.4.3.3 *Location of Drinking on Base, by Service and Region*

- Respondents, especially those living on OCONUS bases, were more likely to do their drinking in on-base housing.
- Significantly more OCONUS respondents reported on-base drinking in barracks, at enlisted clubs, or other on-base clubs.

3.4.3.4 *Location of Drinking off Base, by Service and Region*

- Those personnel living on CONUS bases were more likely to do their drinking in off-base housing than those living on OCONUS bases. This may reflect the

fact that those living OCONUS are less likely to live off base.

- Those personnel living on OCONUS bases were significantly more likely to drink in off-base bars.

3.4.3.5 *Perceived Availability and Acceptability of Tobacco Use, by Service and Region*

- Personnel who smoke endorsed the statement that most of their friends in the military use tobacco products (61.5%).
- Among all Services, 57.3% of respondents indicated that the availability of tobacco products makes it easy to smoke.
- Only 26.7% of respondents reported that smoking is a part of being in the military.

Chapter 4: Unit-Level Influences

Cultural context at the unit level is also part of the broader category of environmental factors thought to have an impact on alcohol and tobacco use; this category includes the physical environment, and social influence, and selection processes (Abby, Smith, and Scott, 1993; Bradizza, Reifman, and Barnes, 1999; Ennett and Bauman, 1994; Rice, Carr-Hill, Dixon, and Sutton, 1998). Social influence includes a variety of factors—such as peer use, perceived norms, social motives (e.g., drinking or smoking to be sociable, drinking to enhance social confidence, smoking to be part of the group), and availability—that have been shown to predict both alcohol and tobacco use and drinking-related problems among civilian populations (Jones-Webb et al., 1997; Oostveen et al., 1996; Smith et al., 1993). Persons who drink heavily and/or use tobacco products may self-identify or choose to associate with others who also engage in those behaviors. Similarly, persons may be selectively assigned to groups based on common characteristics (e.g., age, gender) that may be related to behaviors of concern, such as substance use.

This chapter examines unit-level influences on alcohol and tobacco use. It first reports findings for alcohol use, by Service and unit type (combat, combat support, combat service support), problem drinking levels, and negative effects of use. This is followed by an examination of tobacco use that reports rates of use by Service and unit type, nicotine dependence, and the impact of supervisors' tobacco use. The chapter then examines the climate of respondents' workplace and how it correlates with health behaviors, including the effects of workplace climate on alcohol use. These topics are reported by Service, unit type, and deployment status. Finally, Chapter 4 discusses the culture of alcohol and tobacco use, including the impact of administrative/policy influences on drinking, cultural norms for alcohol use, primary drinking locations, and perceived availability and acceptability of tobacco products.

4.1 Alcohol Use

Since 1972, U.S. Department of Defense (DoD) policies and directives have set forth prevention and treatment policies to confront alcohol abuse and alcoholism among military personnel (e.g., DoD, 1972, 1980, 1983, 1985, 1994, 1997). In 1986, these policies were combined with policies directed more broadly at health behaviors to form a comprehensive health promotion policy that recognized the value of good health and healthy lifestyles for military performance and readiness (Bray, Marsden, Mazzuchi, & Hartman, 1999). Under this policy, programs were directed toward preventing the misuse of alcohol, providing counseling or rehabilitation to abusers, and providing education to various target audiences (Bray, Kroutil, & Marsden, 1995). The DoD Prevention, Safety, and Health Promotion Council (1999) recently put forward a broad-based initiative to address the substantial impact of alcohol on the military. The strategic plan seeks to reduce heavy alcohol use, promote a responsible alcohol use lifestyle and culture, promote alcohol alternatives, and deglamorize alcohol use. Progress toward achieving these goals will be monitored closely, and this study will contribute important information to help monitor progress toward those goals.

More research is needed on the extent of alcohol use and abuse among military personnel and how alcohol use changes as personnel move through their military service. Personnel may come to the military with high rates of alcohol use, and these rates may remain stable or become higher as they adjust to military life. Indeed, the impact of the military environment may lead to increased heavy alcohol use similar to what has been observed for cigarette smoking (e.g., Conway and Cronan, 1992; Cronan and Conway, 1987).

This section examines the extent to which exposure to the military environment is associated with corresponding levels of alcohol use and related problems. Military personnel could experience high levels of stress because this may be their first experience

away from home, and they will want to “fit in” with their peers for social support and to maintain a positive self-concept. The majority of personnel also may be aware of the tradition of alcohol use in the military environment and some already may have a history of heavy alcohol use. However, the new initiative aimed at reducing levels of alcohol abuse in the military may mitigate attitudes and norms toward alcohol abuse (e.g., perceived heavy drinking norms, perceived benefits of alcohol use) and other risk factors (e.g., stress), while enhancing the effects of protective factors (e.g., perceived risks of alcohol abuse, social support, self-concept, religiosity).

4.1.1 *Alcohol Use, by Service and Unit Type*

This section provides eight sets of estimates for each of the Services: (1) any alcohol use, (2) number of days drinking during the past 30 days for drinkers, (3) heavy alcohol use, (4) number of heavy drinking days during the past 30 days for heavy drinkers, (5) average daily ounces of ethanol consumed by drinkers, (6) largest number of drinks on one drinking occasion, (7) number of drinks to feel drunk, and (8) felt drunk two or more times in the past 30 days. It also presents unadjusted estimates on these measures for each of the Services by unit type. (For a full description of combat, combat support, and combat service support unit type, see Chapter 2.) These unadjusted estimates are descriptive only and yield no explanatory information about differences among Services. They do, however, reflect the within-Services differences at the sampled installations for average amount of alcohol consumed by drinkers, the prevalence of heavy alcohol use, and feeling drunk for each of the Services, by unit type.

Table 4.1.1 presents estimates of alcohol use in the past 30 days by Service and unit type. For each Service, alcohol use in the past 30 days was significantly higher among combat units; the highest percentage of alcohol use in the past 30 days was reported by the Marine Corps (83.8%) and lowest was reported by the Army (76.6%) and Air Force (77.0%).

Higher rates of heavy drinking were reported by Marine Corps personnel (40.5%) compared with Air Force

personnel (20.7%). Heavy alcohol use was highest in combat units of the Marine Corps (45.5%) and lowest in combat units of the Air Force (18.0%). Combat Marine Corps unit personnel reported the largest number of heavy drinking days (14.7). With respect to largest number of drinks consumed by drinkers, those in the Marine Corps combat units reported having had 12.3 drinks; those in Army combat units reported an average of 9.8, while the Navy and Air Force combat units reported 8.2 and 6.3 drinks, respectively. The Marine Corps combat support units and combat service support units reported the largest number of drinks needed to feel drunk and Air Force combat units reported the lowest number.

4.1.2 *Problem Drinking Levels, by Service and Unit Type*

Table 4.1.2 reports further information on problem drinking levels by Service and unit type. Please see Chapter 2, Section 2.7.3, for a more detailed description of the Alcohol Use Disorder Identification Test (AUDIT) was used to create the categories of hazardous drinking, harmful drinking, possible dependence, and a combined measure called hazardous level or above. As shown in Table 4.1.2, overall, those in combat units reported higher levels of harmful drinking and possible dependence (5.4% and 5.3%, respectively). Combat unit personnel (39.3%) also reported highest rates of drinking at hazardous drinking level or above. Among the Services, Marine Corps combat units reported the highest rates of hazardous drinking level or above (54.1%).

For the Army units, the alcohol dependence rate was highest for those in combat units (6.0%); in addition, 38.0% of combat personnel were drinking at or above hazardous levels (i.e., AUDIT score greater than or equal to 8). For the Navy, the highest dependence rate was reported in combat support units (4.7%), with 36.9% drinking at or above hazardous levels. For the Marine Corps units, the highest alcohol dependence rate was reported for combat units (10.0%), with 54.1% reporting hazardous or above drinking levels. Air Force combat service support reported the highest rate of possible

Table 4.1.1

Estimates of Alcohol Use, Past 30 Days, by Service and Unit Type

Service/Unit Type	Alcohol Measure							
	Any Alcohol Use	Days Drinking	Heavy Alcohol Use	Days Heavy Drinking	Average Daily Ounces Ethanol	Largest Number of Drinks	Number of Drinks to Feel Drunk	Felt Drunk 2 or More Times
Army								
Combat	78.8 (1.2) ²	9.4 (0.4) ²	31.1 (2.1)	14.3 (0.3) ²	5.2 (0.2)	9.8 (0.3) ³	7.8 (0.2) ³	48.1 (2.1)
Combat support	69.4 (3.1) ¹	6.6 (0.9) ^{1,3}	25.2 (4.6)	10.2 (1.2) ^{1,3}	5.1 (0.4)	8.6 (1.1)	6.8 (0.7)	40.4 (4.5)
Combat service support	73.2 (3.3)	9.5 (0.4) ²	26.9 (3.0)	14.5 (0.5) ²	4.8 (0.4)	8.3 (0.6) ¹	6.8 (0.1) ¹	43.4 (3.6)
Total	76.6 (1.5)	9.3 (0.3)	29.5 (1.7)	14.2 (0.3)	5.1 (0.2)	9.3 (0.3)	7.5 (0.2)	46.3 (1.8)
Navy								
Combat	83.9 (0.7) ^{6,7}	9.5 (0.4) ⁷	27.7 (1.5) ⁷	13.9 (0.4)	3.8 (0.1) ⁶	8.2 (0.4) ⁷	6.7 (0.3)	47.6 (2.2) ⁷
Combat support	79.5 (1.2) ⁵	8.9 (0.2)	28.9 (0.9) ⁷	12.9 (0.4)	4.3 (0.1) ^{5,7}	8.6 (0.2) ⁷	7.1 (0.2)	47.8 (1.1) ⁷
Combat service support	78.0 (1.2) ⁵	8.4 (0.2) ⁵	18.9 (1.3) ^{5,6}	13.0 (0.3)	3.7 (0.2) ⁶	7.1 (0.3) ^{5,6}	6.8 (0.3)	36.5 (1.2) ^{5,6}
Total	79.7 (0.7)	8.8 (0.1)	24.2 (0.8)	13.2 (0.2)	3.9 (0.1)	7.8 (0.2)	6.9 (0.1)	42.7 (0.9)
Marine Corps								
Combat	86.8 (1.1) ^{10,11}	11.2 (0.3) ^{10,11}	45.5 (1.4) ^{10,11}	14.7 (0.4) ¹¹	6.4 (0.2) ¹¹	12.3 (0.3) ^{10,11}	8.2 (0.2)	65.0 (1.8) ^{10,11}
Combat support	83.1 (0.9) ⁹	9.9 (0.2) ⁹	37.9 (1.5) ⁹	13.8 (0.3)	5.9 (0.2)	11.4 (0.3) ⁹	8.3 (0.2)	57.9 (1.4) ⁹
Combat service support	80.3 (1.6) ⁹	9.5 (0.3) ⁹	37.5 (2.8) ⁹	13.2 (0.3) ⁹	5.7 (0.2) ⁹	11.0 (0.4) ⁹	8.3 (0.2)	55.4 (1.8) ⁹
Total	83.8 (0.7)	10.3 (0.2)	40.5 (1.2)	14.1 (0.2)	6.0 (0.1)	11.7 (0.2)	8.2 (0.1)	59.9 (1.2)
Air Force								
Combat	83.3 (1.4) ^{14,15}	8.5 (0.4) ¹⁴	18.0 (1.4)	11.6 (0.7)	2.8 (0.2) ¹⁵	6.3 (0.2) ¹⁵	5.4 (0.2) ^{14,15}	44.7 (2.7) ¹⁴
Combat support	75.8 (1.2) ¹³	7.6 (0.2) ¹³	20.5 (1.5)	11.2 (0.4) ¹⁵	3.3 (0.2)	6.8 (0.2)	6.3 (0.1) ¹³	38.3 (1.5) ¹³
Combat service support	77.3 (2.5) ¹³	8.4 (0.5)	23.8 (4.1)	12.7 (0.4) ¹⁴	3.9 (0.3) ¹³	7.8 (0.6) ¹³	6.6 (0.4) ¹³	45.1 (4.2)
Total	77.0 (1.0)	7.8 (0.2)	20.7 (1.2)	11.5 (0.3)	3.3 (0.1)	6.9 (0.2)	6.2 (0.1)	40.1 (1.2)
All Services								
Combat	80.4 (1.0) ¹⁹	9.6 (0.3) ¹⁸	32.3 (1.6) ^{18,19}	14.3 (0.3) ¹⁸	5.2 (0.1) ¹⁸	9.9 (0.3) ^{18,19}	7.7 (0.2) ^{18,19}	50.2 (1.7) ^{18,19}
Combat support	77.8 (1.0)	8.4 (0.2) ^{17,19}	26.8 (1.1) ¹⁷	12.4 (0.3) ^{17,19}	4.3 (0.1) ¹⁷	8.5 (0.2) ¹⁷	7.1 (0.1) ¹⁷	45.1 (1.2) ¹⁷
Combat service support	75.3 (2.1) ¹⁷	9.2 (0.3) ¹⁸	26.7 (1.9) ¹⁷	14.0 (0.4) ¹⁸	4.7 (0.3)	8.5 (0.4) ¹⁷	7.1 (0.1) ¹⁷	44.1 (2.2) ¹⁷
Total	78.3 (0.8)	9.2 (0.2)	29.2 (1.0)	13.7 (0.2)	4.8 (0.1)	9.1 (0.2)	7.4 (0.1)	47.1 (1.0)

Note: Table entries for average daily ounces of ethanol, days drinking, days heavy drinking, largest number of drinks, and number of drinks to feel drunk are average values among military personnel by Service and unit type. Table entries for any alcohol use, heavy alcohol use, and felt drunk two or more times in the past 30 days are percentages among military personnel by Service and unit type. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of unit type and alcohol use are given in Sections 2.7.1 and 2.7.3, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Days Drinking, Q24, Q28, and Q31; Days Heavy Drinking, Q24–Q35; Average Daily Ounces of Ethanol, Q24–Q35; Largest Number of Drinks, Q36; Number of Drinks to Feel Drunk, Q38; Heavy Alcohol Use, Q24–Q35; Felt Drunk Two or More Times in Past Month, Q37).

Table 4.1.2 Problem Drinking Levels, by Service and Unit Type

Service/Unit Type	Problem Drinking Levels			Hazardous Level or Above ^d
	Hazardous Drinking ^a	Harmful Drinking ^b	Possible Dependence ^c	
Army				
Combat	25.4 (1.2)	6.6 (0.8)	6.0 (0.8)	38.0 (2.1)
Combat support	23.6 (3.3)	4.3 (1.0)	3.3 (1.5)	31.3 (5.7)
Combat service support	21.4 (1.9)	4.6 (1.4)	4.7 (0.9)	30.8 (3.4)
Total	24.0 (1.0)	5.9 (0.7)	5.5 (0.6)	35.4 (1.8)
Navy				
Combat	28.4 (3.4)	4.2 (0.2) ⁷	4.2 (0.7)	36.8 (3.2) ⁷
Combat support	27.1 (1.0) ⁷	5.1 (0.6) ⁷	4.7 (0.3) ⁷	36.9 (1.5) ⁷
Combat service support	21.4 (1.0) ⁶	2.8 (0.3) ^{5,6}	3.3 (0.4) ⁶	27.6 (1.3) ^{5,6}
Total	24.9 (0.9)	3.9 (0.3)	4.0 (0.3)	32.7 (1.1)
Marine Corps				
Combat	34.4 (1.1)	9.7 (1.0) ^{10,11}	10.0 (0.8)	54.1 (1.6) ^{10,11}
Combat support	32.9 (1.1)	7.3 (0.5) ⁹	9.1 (0.6)	49.2 (1.5) ⁹
Combat service support	32.8 (1.8)	6.1 (0.5) ⁹	8.0 (1.0)	47.0 (2.9) ⁹
Total	33.4 (0.7)	7.9 (0.5)	9.2 (0.5)	50.5 (1.1)
Air Force				
Combat	20.0 (2.0)	1.4 (0.4) ¹⁴	1.1 (0.5)	22.5 (2.2)
Combat support	20.5 (1.2)	3.1 (0.4) ¹³	1.7 (0.2)	25.3 (1.3)
Combat service support	24.7 (3.0)	3.1 (0.8)	2.2 (0.3)	30.0 (3.8)
Total	21.1 (1.0)	2.9 (0.3)	1.7 (0.2)	25.6 (1.1)
All Services				
Combat	26.5 (1.0)	6.6 (0.6) ^{18,19}	6.2 (0.7) ¹⁸	39.3 (1.7) ^{18,19}
Combat support	25.0 (0.8)	4.6 (0.3) ¹⁷	4.2 (0.4) ¹⁷	33.9 (1.2) ¹⁷
Combat service support	23.3 (1.3)	4.4 (0.8) ¹⁷	4.7 (0.6)	32.4 (2.2) ¹⁷
Total	25.2 (0.6)	5.4 (0.4)	5.3 (0.3)	35.9 (1.0)

Note: Table displays the percentage of military personnel by Service and unit type with problem drinking levels. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of unit type are given in Section 2.7.1.

^aDefined as an Alcohol Use Disorder Identification Test (AUDIT) score 8–15.

^bDefined as an Alcohol Use Disorder Identification Test (AUDIT) score 16–19.

^cDefined as an Alcohol Use Disorder Identification Test (AUDIT) score ≥ 20 .

^dDefined as an Alcohol Use Disorder Identification Test (AUDIT) score ≥ 8 .

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Problem Drinking Levels, Q20–Q23).

dependence (2.2%), with 30.0% drinking at or above hazardous levels.

4.1.3 Negative Effects of Alcohol Use, by Service and Unit Type

This section examines the negative effects of alcohol consumption on military personnel. These negative effects include administrative action, productivity loss, and serious consequences. Note that the time period for administrative action is entire military career, while the

time period for productivity loss and serious consequences is the past 30 days.

The measure of alcohol-related productivity loss refers to one or more occurrences of (a) being hurt in an on-the-job accident, (b) being late for work or leaving early because of drinking, a hangover, or an illness caused by drinking, (c) not coming to work because of an alcohol-related illness or personal accident, (d) performing below a normal level of performance, (e) working while

drunk, or (f) being called in during off-duty hours and reporting to work feeling drunk.

The measure of alcohol-related serious consequences refers to the occurrence of three or more of the following problems: (a) being passed over for promotion because of drinking, (b) lower score on performance rating because of drinking, (c) loss of 1 week or more from duty because of a drinking-related illness, (d) Uniform Code of Military Justice (UCMJ) punishment because of drinking, (e) arrest for driving while impaired (DWI), (f) alcohol-related arrest other than DWI, (g) alcohol-related incarceration, (h) alcohol-related injury to Service person, (i) alcohol-related accident resulting in someone else's injury or property damage, (j) physical fights while drinking, (k) spouse threatened to leave or left because of drinking, and (l) spouse asked Service person to leave or the person left.

As shown in Table 4.1.3, 9.6% of combat unit respondents, 9.2% of combat support units, and 7.4% of combat service support units reported having received some type of administrative action during their military career. The highest rates of productivity loss were reported by combat units (16.0%), and the lowest rates were reported by combat support units (14.5%). The highest rates of serious consequences were reported by combat units (13.6%).

Among Marine Corps units, those personnel in combat support units reported the highest rates of administrative action (13.0%), and those in combat service support units reported the highest prevalence of serious consequences (18.5%). Army units reported patterns similar to those reported by Marine Corps units, with combat support units having the highest rates of administrative action (10.2%) and productivity loss

4.1.4 References

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Table 4.1.3

Negative Effects of Alcohol Use, by Service and Unit Type

Service/Unit Type	Negative Effects		
	Administrative Action	Productivity Loss	Serious Consequences
Army			
Combat	9.4 (1.0) ³	16.5 (1.1) ²	13.8 (1.3)
Combat support	10.2 (0.3) ³	23.5 (0.9) ^{1,3}	13.4 (1.7)
Combat service support	6.2 (1.2) ^{1,2}	15.0 (2.0) ²	13.9 (2.0)
Total	8.4 (0.8)	16.3 (1.0)	13.8 (1.0)
Navy			
Combat	10.5 (1.2)	13.1 (0.7)	10.7 (0.6) ⁶
Combat support	8.0 (0.4)	15.5 (1.0)	13.7 (1.3) ⁵
Combat service support	7.9 (0.7)	14.4 (0.7)	12.0 (0.9)
Total	8.5 (0.4)	14.5 (0.5)	12.3 (0.6)
Marine Corps			
Combat	11.3 (0.4) ¹⁰	17.4 (1.4)	18.2 (0.7)
Combat support	13.0 (0.7) ⁹	17.7 (0.7)	16.9 (0.9)
Combat service support	11.8 (0.6)	17.4 (0.8)	18.5 (1.4)
Total	12.2 (0.4)	17.5 (0.6)	17.7 (0.6)
Air Force			
Combat	7.2 (1.2)	8.0 (0.9) ^{14,15}	2.9 (0.5) ^{14,15}
Combat support	7.3 (0.6)	11.3 (0.9) ¹³	7.0 (0.7) ¹³
Combat service support	8.0 (1.0)	12.1 (1.4) ¹³	5.8 (0.6) ¹³
Total	7.4 (0.5)	11.0 (0.7)	6.3 (0.5)
All Services			
Combat	9.6 (0.8)	16.0 (0.9)	13.6 (1.0) ¹⁸
Combat support	9.2 (0.4) ¹⁹	14.5 (0.8)	11.1 (0.6) ¹⁷
Combat service support	7.4 (0.7) ¹⁸	14.9 (1.3)	13.4 (1.3)
Total	8.9 (0.4)	15.3 (0.6)	12.9 (0.6)

Note: Table displays the percentage of military personnel by Service and unit type who reported negative effects of alcohol use. Time period for administrative action is entire military career; for productivity loss and serious consequences, the time period is the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of unit type and negative effects of alcohol use are given in Sections 2.7.1 and 2.7.3, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Administrative Action, Q42; Productivity Loss, Q44; Serious Consequences of Alcohol Use, Q43).

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4.2 Tobacco Use

As with alcohol use, there is evidence to suggest that social factors likely to occur within military units can influence military members' tobacco use. Social influence includes a variety of factors such as peer use, perceived norms, social motives (e.g., smoking to be sociable, smoking to be part of the group), and easy availability of tobacco. Social norms and peer and parental influence have been shown to predict smoking initiation in non-military young adults (Buller et al., 2003; Fritz, 2000; Buttross, and Kastner, 2003).

In a prospective cohort study by Killen et al. (1997), peer influence (defined as friends who smoke) was the most important predictor for the initiation of smoking among high school students. And, when compared with children who did not smoke, those who had started smoking in late childhood reported more exposure to both parents and friends who smoked (Jackson, 1997). In looking specifically at a young military population, data from Hunter et al. (2000) suggested that professional role models, such as military training leaders and classroom instructors, may also influence smoking status. For example, in their study, students who knew their military training leader or instructor smoked were 2.5 times more likely to smoke than those who did not know.

This section examines unit-level factors that contribute to tobacco use in the military. It first compares tobacco use (any cigarette use, daily cigarette use, smokeless tobacco use, and cigar use) among the three broad types of units examined earlier for alcohol use: combat units, combat support units, and combat service support units. This is followed by an assessment of nicotine dependence among these three types of units. The relation of supervisor tobacco use to military member use is then assessed, first by contrasting supervisor tobacco use with member use and then contrasting supervisor use with members' perceptions of perceived norms about smoking and whether members had started cigarette or smokeless tobacco use since joining the military.

4.2.1 Tobacco Use, by Service and Unit Type

Table 4.2.1 presents reported use of different types of tobacco in the past 30 days by Service and unit type. Across all Services, personnel showed a remarkably consistent pattern of tobacco use in which combat units reported significantly higher levels of use than combat support or combat service support units. This was true for any cigarette use, daily cigarette use, smokeless tobacco use, and cigar use. More specifically, for any cigarette use, 43.7% of personnel in combat units reported smoking cigarettes in the past 30 days compared with 34.0% of combat support personnel and 37.2% of combat service support personnel. Similarly, for daily cigarette use, personnel in combat units reported a significantly higher rate of use (39.5%) than combat support personnel (29.6%) and combat service support personnel (33.5%). For smokeless tobacco use, personnel in combat units reported a significantly higher rate of use (21.1%) compared with combat support personnel (13.9%) and combat service support (12.0%). Finally, for cigar use, personnel in combat units reported a higher rate of use (33.1%) compared with combat support personnel (29.2%) and combat service support (28.6%).

Among the Services, the same general pattern occurred, but not all unit differences were statistically significant and, in some cases, combat and combat support were both higher than combat service support. In most cases, however, combat units showed the highest rates of tobacco use. The exception was in the Air Force; personnel in combat units reported lower use compared with combat support and combat service support units for any cigarette use and daily cigarette use.

These data show clear unit type differences in tobacco use that may be partly a function of differing demographics among persons comprising the units. They may also reflect job interests and some self-selection, such that those who smoke are more likely to choose combat arms as their specialty.

Table 4.2.1 Tobacco Use, Past 30 Days, by Service and Unit Type

Service/Unit Type	Tobacco Measure			
	Any Cigarette Use	Daily Cigarette Use	Smokeless Tobacco Use	Cigar Use
Army				
Combat	46.3 (1.9)	42.6 (1.6)	21.9 (1.9) ^{2,3}	31.6 (1.9) ²
Combat support	39.5 (3.5)	35.0 (4.0)	13.6 (2.0) ¹	24.8 (1.7) ¹
Combat service support	38.9 (3.3)	35.6 (3.2)	12.0 (1.2) ¹	27.8 (2.6)
Total	43.6 (1.8)	40.1 (1.6)	18.4 (1.4)	30.1 (1.5)
Navy				
Combat	38.8 (2.7) ⁷	33.5 (2.3) ⁷	10.6 (2.2)	32.4 (2.3)
Combat support	36.4 (1.1) ⁷	32.2 (1.0) ⁷	10.1 (0.9)	28.4 (0.9)
Combat service support	30.3 (1.6) ^{5,6}	26.7 (1.3) ^{5,6}	8.1 (0.9)	28.8 (1.1)
Total	34.2 (1.0)	30.0 (0.8)	9.3 (0.6)	29.4 (0.7)
Marine Corps				
Combat	41.7 (2.0)	35.4 (1.7)	23.8 (1.1) ¹⁰	39.9 (2.1) ¹¹
Combat support	41.2 (0.8)	35.1 (0.9)	19.9 (1.1) ⁹	35.5 (1.1)
Combat service support	42.1 (2.3)	37.3 (2.2)	19.7 (2.0)	33.4 (1.6) ⁹
Total	41.6 (0.9)	35.7 (0.9)	21.2 (0.7)	36.6 (0.9)
Air Force				
Combat	17.7 (1.6) ^{14,15}	13.8 (1.6) ^{14,15}	12.5 (1.3)	37.2 (2.1) ^{14,15}
Combat support	28.8 (1.4) ¹³	25.2 (1.4) ¹³	11.8 (0.8)	26.7 (0.6) ¹³
Combat service support	31.0 (3.2) ¹³	26.4 (2.7) ¹³	8.0 (1.8)	26.9 (2.0) ¹³
Total	27.6 (1.2)	23.9 (1.2)	11.3 (0.6)	28.1 (0.7)
All Services				
Combat	43.7 (1.6) ^{18,19}	39.5 (1.4) ^{18,19}	21.1 (1.5) ^{18,19}	33.1 (1.5) ^{18,19}
Combat support	34.0 (0.8) ¹⁷	29.6 (0.8) ¹⁷	13.9 (0.6) ¹⁷	29.2 (0.6) ¹⁷
Combat service support	37.2 (2.1) ¹⁷	33.5 (2.1) ¹⁷	12.0 (0.9) ¹⁷	28.6 (1.7) ¹⁷
Total	39.2 (1.0)	35.1 (0.9)	16.6 (0.8)	30.8 (0.9)

Note: Table displays the percentage of military personnel by Service and unit type who reported any cigarette use, daily cigarette use, smokeless tobacco use, or cigar use within the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of unit type and tobacco use are given in Sections 2.7.1 and 2.7.4, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Any Cigarette Use, Q52 and Q57; Daily Cigarette Use, Q52, Q57, and Q62; Smokeless Tobacco Use, Q71; Cigar Use, Q80).

4.2.2 Nicotine Dependence

Table 4.2.2 reports levels of nicotine dependence among cigarette smokers by Service and unit type. At the level of all Services, combat units reported a greater rate of high and moderate nicotine dependence (14.2% and 22.8%, respectively) compared with combat support (5.2% and 14.5%) and combat service support (10.5% and 17.6%) units. This finding is consistent with the higher level of cigarette smoking among combat units (shown in Table 4.2.1). Once again, among the Services, Air Force personnel showed a different pattern of dependence level, with combat units less likely to report

high and moderate nicotine dependence compared with their counterparts (although the significance levels vary slightly for which statistically significant). The Navy was similar to the Air Force in terms of those classified as having high dependence.

4.2.3 Relation of Supervisor Tobacco Use to Military Member Tobacco Use

Table 4.2.3 reports any cigarette, smokeless tobacco, and cigar use by Service and by reports of supervisor tobacco use. The data in the table show a consistent and striking pattern, namely that personnel who indicated that their supervisor used tobacco products were

Table 4.2.2 Symptoms of Nicotine Dependence among Cigarette Smokers, Past 30 Days, by Service and Unit Type

Service/Unit Type	Dependence Level		
	Low	Moderate	High
Army			
Combat	59.2 (2.0) ^{2,3}	24.7 (1.8) ^{2,3}	16.1 (1.2) ^{2,3}
Combat support	74.6 (3.3) ¹	18.7 (2.3) ¹	6.6 (1.1) ^{1,3}
Combat service support	70.8 (1.8) ¹	17.7 (2.9) ¹	11.5 (1.8) ^{1,2}
Total	63.0 (1.7)	22.5 (1.6)	14.5 (1.0)
Navy			
Combat	84.6 (1.8) ⁷	13.3 (1.7)	2.1 (0.5) ^{6,7}
Combat support	81.1 (0.9) ⁷	13.8 (0.3)	5.1 (0.8) ^{5,7}
Combat service support	74.4 (2.0) ^{5,6}	15.4 (1.2)	10.1 (1.1) ^{5,6}
Total	79.3 (1.2)	14.3 (0.7)	6.4 (0.8)
Marine Corps			
Combat	75.2 (1.0)	17.0 (1.0) ¹¹	7.9 (0.8)
Combat support	77.6 (1.2) ¹¹	15.7 (1.1) ¹¹	6.7 (0.5)
Combat service support	71.5 (2.4) ¹⁰	20.9 (1.8) ^{9,10}	7.6 (1.4)
Total	75.4 (0.8)	17.3 (0.7)	7.3 (0.4)
Air Force			
Combat	91.0 (1.9) ^{14,15}	6.4 (1.7) ^{14,15}	2.6 (1.4) ¹⁵
Combat support	83.2 (1.6) ^{13,15}	13.1 (1.3) ¹³	3.8 (0.7) ¹⁵
Combat service support	77.1 (2.7) ^{13,14}	14.6 (1.5) ¹³	8.3 (2.0) ^{13,14}
Total	82.8 (1.4)	12.8 (1.0)	4.4 (0.7)
All Services			
Combat	63.1 (1.9) ^{18,19}	22.8 (1.5) ^{18,19}	14.2 (1.0) ^{18,19}
Combat support	80.3 (0.9) ^{17,19}	14.5 (0.7) ¹⁷	5.2 (0.4) ^{17,19}
Combat service support	71.9 (1.3) ^{17,18}	17.6 (1.9) ¹⁷	10.5 (1.2) ^{17,18}
Total	69.5 (1.2)	19.5 (1.0)	11.1 (0.7)

Note: Table displays the percentage of military personnel by Service and unit type who were cigarette smokers and who reported symptoms of nicotine dependence in the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of unit type and nicotine dependence levels are given in Sections 2.7.1 and 2.7.4, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use Among Military Personnel, 2006 (Symptoms of Nicotine Dependence, Q58–Q63).

significantly more likely to report using tobacco products themselves. More specifically, across all Services, personnel who said that their supervisor smoked cigarettes were more likely to report any cigarette use (46.6% vs. 27.0%), smokeless tobacco use (18.9% vs. 12.8%), and cigar use (33.7% vs. 25.9%). Similarly, personnel who indicated that their supervisor used smokeless tobacco were more likely to report any cigarette use (44.9% vs. 34.8%), smokeless tobacco use (25.3% vs. 10.1%), and cigar use (36.3% vs. 26.6%). In addition, those who indicated that their supervisor smoked cigars were more likely to report any cigarette use (40.6% vs. 37.4%), smokeless tobacco use (20.0% vs. 15.4%), and cigar use (46.4% vs. 25.7%). This strong

pattern held true in almost all cases at the individual Service level as well. Thus, a clear relation can be seen between perceived supervisor tobacco use and increased use of cigarettes, smokeless tobacco, and cigars by military personnel.

Table 4.2.4 reports factors influencing use of tobacco by Service and by reports of supervisor tobacco use. Respondents were asked to indicate whether they smoked cigarettes or used other tobacco products in order to fit in with their military unit, whether they agreed that smoking or using other tobacco products is

Table 4.2.3 Tobacco Use, Past 30 Days, by Service and Supervisor Tobacco Use

Service/Tobacco Use	Supervisor Smokes Cigarettes		Supervisor Uses Smokeless Tobacco		Supervisor Smokes Cigars	
	Yes	No	Yes	No	Yes	No
Army						
Any cigarette use	50.0 (1.8) ²	30.6 (1.7) ¹	47.5 (2.0) ⁴	39.8 (1.8) ³	43.9 (2.4)	42.0 (1.7)
Smokeless tobacco use	20.6 (1.5) ²	14.0 (1.6) ¹	26.2 (1.9) ⁴	10.8 (0.9) ³	21.7 (2.6)	17.3 (1.4)
Cigar use	33.3 (2.0) ²	23.4 (1.5) ¹	34.7 (1.7) ⁴	25.5 (1.5) ³	43.3 (2.0) ⁶	25.8 (1.4) ⁵
Navy						
Any cigarette use	40.1 (1.0) ²	24.8 (1.3) ¹	37.3 (1.5) ⁴	33.0 (1.1) ³	38.6 (2.2) ⁶	32.3 (1.0) ⁵
Smokeless tobacco use	10.4 (0.8) ²	7.7 (0.7) ¹	17.5 (1.2) ⁴	6.3 (0.5) ³	13.2 (1.6) ⁶	8.4 (0.5) ⁵
Cigar use	31.9 (0.8) ²	25.8 (1.2) ¹	34.1 (1.6) ⁴	27.8 (0.7) ³	50.0 (1.6) ⁶	24.7 (0.8) ⁵
Marine Corps						
Any cigarette use	48.2 (0.9) ²	29.5 (1.1) ¹	48.2 (1.1) ⁴	35.9 (1.1) ³	41.1 (1.3)	39.6 (1.1)
Smokeless tobacco use	23.2 (0.8) ²	17.7 (0.9) ¹	29.8 (1.0) ⁴	14.0 (0.6) ³	21.9 (1.2)	19.9 (0.8)
Cigar use	38.6 (1.0) ²	33.0 (1.1) ¹	43.0 (1.0) ⁴	31.3 (1.0) ³	50.3 (1.4) ⁶	29.7 (1.0) ⁵
Air Force						
Any cigarette use	35.9 (1.2) ²	20.6 (1.2) ¹	32.3 (1.6) ⁴	25.4 (1.3) ³	31.4 (2.1) ⁶	26.0 (1.2) ⁵
Smokeless tobacco use	12.8 (0.8) ²	9.8 (0.9) ¹	19.2 (1.4) ⁴	7.8 (0.6) ³	15.5 (1.4) ⁶	10.4 (0.7) ⁵
Cigar use	30.2 (0.9) ²	26.1 (1.0) ¹	35.4 (1.3) ⁴	24.8 (0.8) ³	48.9 (2.6) ⁶	23.0 (0.7) ⁵
All Services						
Any cigarette use	46.6 (1.1) ²	27.0 (0.8) ¹	44.9 (1.3) ⁴	34.8 (0.9) ³	40.6 (1.4) ⁶	37.4 (1.0) ⁵
Smokeless tobacco use	18.9 (0.9) ²	12.8 (0.8) ¹	25.3 (1.2) ⁴	10.1 (0.4) ³	20.0 (1.4) ⁶	15.4 (0.7) ⁵
Cigar use	33.7 (1.2) ²	25.9 (0.8) ¹	36.3 (1.1) ⁴	26.6 (0.8) ³	46.4 (1.2) ⁶	25.7 (0.8) ⁵

Note: Table displays the percentage of military personnel by Service and supervisor tobacco use who reported tobacco use. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of tobacco use are given in Section 2.7.4.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Any Cigarette Use, Q52 and Q57; Smokeless Tobacco Use, Q71; Cigar Use, Q80; Supervisor Smokes Cigarettes, Q55; Supervisor Uses Smokeless Tobacco, Q74; Supervisor Smokes Cigars, Q81).

Table 4.2.4

influences on Tobacco Use, by Service and Supervisor Tobacco Use

Service/Influence	Supervisor Smokes Cigarettes		Supervisor Uses Smokeless Tobacco		Supervisor Smokes Cigars	
	Yes	No	Yes	No	Yes	No
Army						
Smoke to fit in with unit	18.4 (1.1) ²	13.0 (1.5) ¹	18.2 (1.2) ⁴	15.1 (1.1) ³	21.2 (2.2) ⁶	15.2 (1.0) ⁵
Smoking part of being in military	32.9 (1.3) ²	26.2 (1.9) ¹	34.0 (1.7) ⁴	27.2 (1.3) ³	34.7 (2.6)	29.9 (1.6)
Started cigarettes since joining military	23.2 (1.1) ²	16.3 (1.1) ¹	20.5 (1.3)	21.2 (1.3)	22.1 (2.3)	20.1 (0.8)
Started smokeless tobacco use since joining military	18.9 (1.5) ²	13.9 (1.6) ¹	22.9 (1.8) ⁴	11.9 (1.0) ³	19.0 (1.7)	16.5 (1.4)
Navy						
Smoke to fit in with unit	19.4 (0.9) ²	13.5 (0.7) ¹	20.6 (1.1) ⁴	15.8 (0.8) ³	23.8 (1.7) ⁶	15.5 (0.8) ⁵
Smoking part of being in military	26.3 (0.8) ²	16.8 (0.8) ¹	27.2 (1.6) ⁴	21.0 (0.7) ³	29.1 (1.7) ⁶	21.2 (0.7) ⁵
Started cigarettes since joining military	24.0 (0.8) ²	15.3 (0.8) ¹	22.6 (0.9) ⁴	19.9 (0.8) ³	26.4 (1.4) ⁶	19.0 (0.8) ⁵
Started smokeless tobacco use since joining military	9.6 (0.5) ²	7.0 (0.6) ¹	14.7 (1.0) ⁴	6.4 (0.4) ³	14.7 (1.6) ⁶	7.1 (0.4) ⁵
Marine Corps						
Smoke to fit in with unit	20.6 (0.7) ²	16.0 (0.6) ¹	21.2 (0.8) ⁴	17.3 (0.7) ³	21.8 (1.0) ⁶	17.7 (0.6) ⁵
Smoking part of being in military	29.7 (0.8) ²	20.8 (0.9) ¹	31.0 (0.9) ⁴	23.0 (0.7) ³	31.5 (1.2) ⁶	24.8 (0.7) ⁵
Started cigarettes since joining military	28.5 (0.8) ²	18.5 (0.9) ¹	27.9 (0.9) ⁴	22.4 (0.9) ³	26.9 (0.9) ⁶	23.1 (0.8) ⁵
Started smokeless tobacco use since joining military	23.1 (0.8) ²	17.6 (0.8) ¹	28.2 (1.1) ⁴	15.3 (0.7) ³	24.4 (1.2) ⁶	18.8 (0.7) ⁵
Air Force						
Smoke to fit in with unit	14.4 (0.7) ²	8.1 (0.7) ¹	15.4 (0.8) ⁴	9.0 (0.7) ³	14.1 (1.9) ⁶	10.0 (0.6) ⁵
Smoking part of being in military	22.6 (1.0) ²	14.7 (0.7) ¹	25.8 (1.3) ⁴	15.3 (0.8) ³	23.4 (2.1) ⁶	17.4 (0.7) ⁵
Started cigarettes since joining military	19.2 (0.9) ²	11.1 (0.7) ¹	16.5 (1.4)	13.9 (0.7)	18.1 (1.3) ⁶	13.6 (0.6) ⁵
Started smokeless tobacco use since joining military	11.5 (0.6) ²	7.1 (0.6) ¹	14.7 (0.7) ⁴	6.6 (0.4) ³	13.9 (1.1) ⁶	7.9 (0.5) ⁵
All Services						
Smoke to fit in with unit	18.3 (0.7) ²	12.2 (0.7) ¹	18.5 (0.8) ⁴	14.1 (0.6) ³	20.4 (1.2) ⁶	14.6 (0.6) ⁵
Smoking part of being in military	30.2 (0.8) ²	21.2 (0.9) ¹	31.9 (1.1) ⁴	22.9 (0.6) ³	31.6 (1.4) ⁶	25.7 (0.8) ⁵
Started cigarettes since joining military	23.6 (0.7) ²	15.1 (0.5) ¹	21.5 (0.8)	19.5 (0.6)	22.9 (1.2) ⁶	19.1 (0.5) ⁵
Started smokeless tobacco use since joining military	17.7 (0.9) ²	11.9 (0.8) ¹	22.2 (1.1) ⁴	10.5 (0.5) ³	19.0 (1.0) ⁶	14.2 (0.8) ⁵

Note: Table displays the percentage of military personnel by Service and supervisor tobacco use who reported factors influencing tobacco use. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of influences on tobacco use and supervisor tobacco use are given in Section 2.7.4.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Smoke to Fit In with Unit, Q68b; Smoking Is Part of Being in the Military, Q67c; Started Smoking since Joining the Military, Q54; Started Smokeless Tobacco Use since Joining the Military, Q72; Supervisor Smokes Cigarettes, Q55; Supervisor Uses Smokeless Tobacco, Q74; Supervisor Smokes Cigars, Q81).

part of being in the military, and whether they had started smoking cigarettes or using smokeless tobacco since joining the military. Once again, a consistent pattern emerged. At the level of all Services, personnel who indicated that their supervisor used tobacco products were significantly more likely to respond positively to these items. Personnel who said that their supervisor smoked cigarettes were more likely to indicate that they smoked cigarettes or used other tobacco products in order to fit in with their military unit (18.3% vs. 12.2%), to agree that smoking or using other tobacco products is part of being in the military (30.2% vs. 21.2%), to have started smoking cigarettes since joining the military (23.6% vs. 15.1%), and to have started using smokeless tobacco since joining the military (17.7% vs. 11.9%).

Persons who indicated that their supervisor used smokeless tobacco were also more likely to report that they smoked cigarettes or used other tobacco products in order to fit in with their military unit (18.5% vs. 14.1%), to agree that smoking or using other tobacco products is part of being in the military (31.9% vs. 22.9%), and to have started using smokeless tobacco since joining the military (22.2% vs. 10.5%).

Respondents who reported that their supervisor smoked cigars were more likely to indicate that they smoked cigarettes or used other tobacco products in order to fit in with their military unit (20.4% vs. 14.6%), to agree that smoking or using other tobacco products is part of being in the military (31.6% vs. 25.7%), to have started smoking cigarettes since joining the military (22.9% vs. 19.1%), and to have started using smokeless tobacco since joining the military (19.0% vs. 14.2%).

Once again, this pattern held true in almost all cases at the Service level. Supervisor tobacco use was clearly predictive of member tobacco use, regardless of the type of tobacco used, and perceptions of norms about fitting into the unit or military and the likelihood of starting smoking in the military. These data suggest that military leaders' use of tobacco may encourage military members to use tobacco. They also suggest that if fewer supervisors used tobacco it may encourage military members not to use tobacco. Thus, military supervisors

may be an important target group for tobacco prevention and cessation interventions.

4.2.4 References

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4.3 Workplace Climate

An exploration of the effects of unit cohesion on alcohol use among military personnel begins with a larger set of workplace dynamics that comprise workplace climate. Organizational climate is a multilevel construct that includes perceptions of the organization at the individual level and shared beliefs among employees at the organizational level (Dickson, Resick, & Hanges, 2006). Denison (1996) differentiated between organizational climate and culture, whereby *climate* is aspects of the social environment consciously perceived by organization members and *culture* involves deeper structures of the organization.

Organizational climate has been shown to be related to service quality (Schneider, Salvaggio, & Subirats, 2002) and to be a mediator among climate and individual and organizational outcomes. Direct relations have been found between climate and individual outcomes, including satisfaction (Hackman & Oldham, 1976; James & Jones, 1980; James & Tetrick, 1986), productivity (James & Jones, 1974; Patterson, Warr, & West, 2004), turnover (Schneider & Bowen, 1985), and organizational citizenship behaviors (Smith, Organ, & Near, 1983). Additionally, significant relations have been found between climate and organizational outcomes such as overall effectiveness, technical performance, and updating orientation (Kozlowski & Hults, 1987); safety program effectiveness and accident prevention (Zohar, 1980); and organizational performance (Lindell & Whitney, 1995). These studies indicate that factors that comprise organizational climate appear to have a significant impact on organizational outcomes in the civilian workforce.

In a study of workplace climate and cohesion, Lindell and Brandt (2000) found that most researchers adhere to Katz and Kahn's (1978) description of climate, where climate is measured by attributes such as leader, team, role, and job characteristics (James, James, & Ashe, 1990). One factor of workplace climate (described by James, James, and Ashe [1990] as "team") is unit cohesion. Unit cohesion, defined by Martin et al. (2000) as a sense of group integration and personal bonding among Service members as a result of their regular interactions during work, training, or war-fighting maneuvers, is an essential dynamic for military readiness (Kellett, 1982; Little, 1964; Marshall, 1966). Unit cohesion has been found to have a strong positive relation with physical and psychological outcomes such as general mental health outcomes (Martin et al., 2000), well-being (Cohen & Willis, 1985; Griffith, 2002), enjoyment and belonging (Bales, 1950), satisfaction of personal needs and goals (Bass, 1960; Deutsch, 1959), self-identity (Hogg, 1987), and moderation of the negative effects of accumulated traumatic events (Martin et al., 2000). Unit cohesion also has been found to have an inverse relation with internal stress (Kirkland, Bartone, & Marlowe, 1993; Mael & Alderks, 1993), where stress decreases as cohesion increases. Recent

research demonstrated the relations of unit cohesion with organizational outcomes, including perceptions of individual readiness and unit readiness (Griffith, 2002), job significance and work-family conflict (Britt & Dawson, 2005), and pre- and postdeployment morale (Maguen & Litz, 2006).

The objective of the current section in reference to workplace climate and unit cohesion was to explore the relation among unit-level factors and alcohol use. Focus group interviews with military personnel were conducted to develop items that captured unit-level dynamics affecting individual alcohol and tobacco use. Data were collected and the survey items underwent exploratory factor analysis to determine the factor structure of workplace climate scales. Furthermore, item-response theory (IRT) analyses, utilizing the one-parameter Rasch model, were applied to identify and remove items with unexpected response patterns. Confirmatory factor analyses were conducted on a separate hold-out sample, verifying the exploratory factor analysis, with four factors emerging—horizontal cohesion, job dissatisfaction, quality of work life (QOWL), and vertical cohesion. Dividing unit cohesion into two components—horizontal cohesion (i.e., cohesion among peers within a unit) and vertical cohesion (i.e., cohesion between unit members and supervisors)—was done to align the measures identified in the current study with similar constructs described in the literature by Griffith (1988) and Vaitkus and Griffith (1990).

Beyond the development of measures of workplace climate (including unit cohesion), two research questions were examined: (1) Does problem drinking (as measured by the AUDIT score) vary by Service (i.e., Army, Navy, Marine Corps, and Air Force) and by unit type (i.e., combat, combat support, and combat service support)? (2) Does problem drinking (as measured by the AUDIT score) vary by Service and deployment status (i.e., combat deployed, noncombat deployed, not deployed)?

Comparisons of results among groups is different in this chapter in that results are presented as mean score values on a range of 1 to 5 where 1 is at the low end of the rating scale (either, "dissatisfied," "very inaccurate," or "very untrue" depending on the rating scale used) and a

5 is at the high end of the rating scale (either “satisfied,” “very accurate,” or “very true” depending on the rating scale used). Whereas other chapters report descriptive statistics on the percentage that “agree” or “strongly agree” with a question, data for this chapter are interpreted on the 1 to 5 scale. Unit-level analyses test the significance of the differences among mean scores by unit type and deployment status.

4.3.1 *Effect of Workplace Climate on Alcohol Use, by Service and Unit Type*

Much of the research literature illustrates the importance of workplace climate on health behaviors. In most cases, workplace climate and unit cohesion are positively correlated with positive health behaviors or, at a minimum, serve as a moderator variable to positively affect health behaviors. To date, no research has been conducted exploring whether workplace climate varies by unit type (i.e., combat, combat support, or combat service support). To examine differences in workplace climate by unit type, mean scores were calculated for each of the four factors. Table 4.3.1 explores mean scores on horizontal cohesion, job dissatisfaction, QOWL, and vertical cohesion.

When examining mean scores for the Services combined, results indicated that aspects of workplace climate vary by unit type. Combat units had significantly lower horizontal cohesion and higher job dissatisfaction than combat support units. In addition, respondents from combat units had significantly lower QOWL and vertical cohesion than those from combat support units. At a Service level, results for components of workplace climate also indicated differences between horizontal cohesion, job dissatisfaction, QOWL, and vertical cohesion by unit type. Air Force and Navy combat units reported significantly higher horizontal cohesion than combat support units. For Navy and Marine Corps, job dissatisfaction was higher among combat and combat support units than combat service support units. The direction of unit-level differences were reversed for Air Force units: job dissatisfaction was significantly higher in combat service support units than combat units. QOWL was significantly lower for DoD combat units

than combat support units. Marine Corps combat units had significantly lower QOWL than combat service support units. The theme of QOWL being lower for combat units was reversed among Air Force units, where QOWL was significantly lower for combat support and combat service support units than combat units. Only Air Force units had differences in vertical cohesion by unit type, where combat units were significantly more satisfied with their supervisors than other unit types.

Table 4.3.2 examined mean score differences between unit types (by Service) on problem drinking as measured by the AUDIT score (AUDIT < 8 versus AUDIT ≥ 8) on horizontal cohesion, job dissatisfaction, QOWL, and vertical cohesion. Mean scores were compared within Services among unit types to determine whether there are differences among unit types—combat, combat support, and combat service support.

Results for horizontal cohesion indicated that, among nonproblem drinkers (AUDIT < 8), cohesion was significantly higher in combat support than in combat and combat service support units. Participants with high problem drinking scores (AUDIT ≥ 8) reported significantly higher horizontal cohesion in combat support units when compared with combat service support. Unit-level significant differences on the dimension of job dissatisfaction occurred among respondents that reported nonproblem and problem drinking (AUDIT < 8 and AUDIT ≥ 8), reporting higher job dissatisfaction among combat units when compared with other unit types. QOWL and vertical cohesion are both significantly higher for combat support units than combat units. Air Force respondents with high problem drinking scores (AUDIT ≥ 8) in combat units reported significantly higher horizontal cohesion than Air Force respondents in combat support or combat service support units. Soldiers with high problem drinking scores (AUDIT ≥ 8) in combat units reported significantly higher job dissatisfaction than those in combat service support units. Sailors that were nonproblem drinkers (AUDIT < 8) reported significantly lower QOWL in combat units than combat service support units.

Table 4.3.1 Workplace Climate, by Service and Unit Type

Service/Unit Type	Workplace Climate Measure			
	Horizontal Cohesion	Job Dissatisfaction	Quality of Work Life	Vertical Cohesion
Army				
Combat	3.5 (0.0)	2.9 (0.0)	3.5 (0.1) ²	3.7 (0.1)
Combat support	3.5 (0.0)	2.9 (0.0)	3.4 (0.0) ^{1,3}	3.7 (0.0)
Combat service support	3.4 (0.1)	2.8 (0.0)	3.6 (0.1) ²	3.7 (0.1)
Total	3.5 (0.0)	2.9 (0.0)	3.5 (0.0)	3.7 (0.1)
Navy				
Combat	3.7 (0.0) ⁶	2.8 (0.0) ⁷	3.6 (0.1)	3.8 (0.1)
Combat support	3.6 (0.0) ⁵	2.8 (0.0) ⁷	3.7 (0.1)	3.9 (0.0)
Combat service support	3.7 (0.0)	2.7 (0.0) ^{5,6}	3.8 (0.1)	3.9 (0.1)
Total	3.7 (0.0)	2.7 (0.0)	3.7 (0.0)	3.9 (0.0)
Marine Corps				
Combat	3.7 (0.0) ¹¹	2.8 (0.0) ¹¹	3.6 (0.0) ¹¹	3.9 (0.1)
Combat support	3.7 (0.0)	2.8 (0.0) ¹¹	3.7 (0.0)	3.9 (0.0)
Combat service support	3.7 (0.0) ⁹	2.7 (0.0) ^{9,10}	3.7 (0.0) ⁹	3.9 (0.0)
Total	3.7 (0.0)	2.8 (0.0)	3.7 (0.0)	3.9 (0.0)
Air Force				
Combat	4.0 (0.1) ¹⁴	2.6 (0.1) ¹⁵	4.1 (0.1) ^{14,15}	4.3 (0.1) ^{14,15}
Combat support	3.8 (0.0) ¹³	2.7 (0.0)	3.8 (0.0) ¹³	4.1 (0.0) ¹³
Combat service support	3.9 (0.0)	2.8 (0.0) ¹³	3.8 (0.1) ¹³	4.1 (0.1) ¹³
Total	3.8 (0.0)	2.7 (0.0)	3.9 (0.0)	4.1 (0.0)
All Services				
Combat	3.6 (0.0) ¹⁸	2.9 (0.0) ^{18,19}	3.6 (0.0) ¹⁸	3.8 (0.0) ¹⁸
Combat support	3.7 (0.0) ^{17,19}	2.7 (0.0) ¹⁷	3.7 (0.0) ¹⁷	4.0 (0.0) ¹⁷
Combat service support	3.5 (0.1) ¹⁸	2.8 (0.0) ¹⁷	3.6 (0.1)	3.8 (0.1)
Total	3.6 (0.0)	2.8 (0.0)	3.6 (0.0)	3.8 (0.0)

Note: Table displays the mean scores among military personnel by Service and unit type who reported workplace climate measures on a scale from 1 to 5, where 1 is “dissatisfied,” “very inaccurate,” or “very untrue” and 5 is “satisfied,” “very accurate,” or “very true.” The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of unit type and workplace climate are given in Sections 2.7.1 and 2.7.7, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Horizontal Cohesion, Q88g–h and Q89a–f; Job Dissatisfaction, Q88a–f; Quality of Work Life, Q15a–c and Q15g–h; Vertical Cohesion, Q15d–f).

4.3.2 Effect of Workplace Climate on Alcohol Use, by Service and Deployment Status

As with unit type, no research has been conducted to date that examines whether workplace climate varies by unit deployment status (i.e., combat deployed, noncombat deployed, and not deployed). Table 4.3.3 explores mean scores on unit cohesion, job dissatisfaction, QOWL, and vertical cohesion. Mean scores were compared within Services among units in terms of deployment status. Mean scores were also compared among the Services.

Results indicated that workplace climate varied significantly by deployment status. Respondents who had combat deployed reported significantly lower horizontal cohesion than those that were not deployed. Deployed personnel (combat deployed and noncombat deployed) reported significantly higher job dissatisfaction, lower QOWL, and lower vertical cohesion than those were not deployed. Soldiers that had noncombat deployed reported significantly higher job dissatisfaction than combat deployed and Soldiers that were not deployed. Deployed Sailors, Marines, and Air Force personnel (combat deployed and noncombat deployed) reported significantly higher job

Table 4.3.2

Workplace Climate, by Service, Unit Type, and AUDIT Score^a

Service/Unit Type	Workplace Climate Measure and AUDIT Score							
	Horizontal Cohesion		Job Dissatisfaction		Quality of Work Life		Vertical Cohesion	
	AUDIT < 8	AUDIT ≥ 8	AUDIT < 8	AUDIT ≥ 8	AUDIT < 8	AUDIT ≥ 8	AUDIT < 8	AUDIT ≥ 8
Army								
Combat	3.6 (0.0)	3.4 (0.1)	2.8 (0.0)	3.0 (0.1) ³	3.6 (0.0) ²	3.3 (0.1)	3.8 (0.1)	3.5 (0.1)
Combat support	3.6 (0.0)	3.3 (0.1)	2.8 (0.0)	3.0 (0.0)	3.4 (0.1) ^{1,3}	3.3 (0.1)	3.8 (0.0)	3.4 (0.0)
Combat service support	3.5 (0.1)	3.2 (0.1)	2.8 (0.0)	2.9 (0.1) ¹	3.6 (0.1) ²	3.4 (0.1)	3.9 (0.1)	3.4 (0.1)
Total	3.6 (0.0)	3.4 (0.0)	2.8 (0.0)	3.0 (0.0)	3.6 (0.0)	3.4 (0.1)	3.8 (0.1)	3.5 (0.1)
Navy								
Combat	3.7 (0.0) ⁶	3.7 (0.0)	2.8 (0.0) ⁷	2.9 (0.0)	3.7 (0.1) ⁷	3.5 (0.1)	4.0 (0.1)	3.5 (0.1)
Combat support	3.7 (0.0) ⁵	3.5 (0.1)	2.7 (0.0) ⁷	2.9 (0.0)	3.8 (0.1)	3.5 (0.1)	3.9 (0.0)	3.8 (0.1)
Combat service support	3.7 (0.0)	3.5 (0.0)	2.6 (0.0) ^{5,6}	2.8 (0.0)	3.9 (0.1) ⁵	3.5 (0.1)	4.0 (0.0)	3.7 (0.1)
Total	3.7 (0.0)	3.6 (0.0)	2.7 (0.0)	2.9 (0.0)	3.8 (0.0)	3.5 (0.0)	4.0 (0.0)	3.7 (0.1)
Marine Corps								
Combat	3.8 (0.0) ¹¹	3.7 (0.0) ¹¹	2.7 (0.0)	2.9 (0.0) ¹¹	3.8 (0.0) ¹¹	3.5 (0.0)	4.1 (0.0)	3.8 (0.1)
Combat support	3.8 (0.0)	3.6 (0.0)	2.7 (0.0)	2.9 (0.0) ¹¹	3.8 (0.0)	3.5 (0.0)	4.1 (0.0) ¹¹	3.8 (0.0)
Combat service support	3.7 (0.0) ⁹	3.6 (0.0) ⁹	2.6 (0.0)	2.8 (0.0) ^{9,10}	3.9 (0.0) ⁹	3.6 (0.0)	4.0 (0.0) ¹⁰	3.7 (0.0)
Total	3.8 (0.0)	3.7 (0.0)	2.7 (0.0)	2.9 (0.0)	3.8 (0.0)	3.5 (0.0)	4.1 (0.0)	3.8 (0.0)
Air Force								
Combat	3.9 (0.1)	4.1 (0.1) ^{14,15}	2.6 (0.0)	2.6 (0.1) ^{14,15}	4.1 (0.1)	4.0 (0.1) ^{14,15}	4.3 (0.1) ¹⁵	4.3 (0.2) ¹⁴
Combat support	3.8 (0.0)	3.7 (0.0) ¹³	2.6 (0.0)	2.8 (0.0) ¹³	3.9 (0.0)	3.7 (0.0) ¹³	4.2 (0.0)	3.9 (0.1) ¹³
Combat service support	3.9 (0.0)	3.8 (0.0) ¹³	2.7 (0.0)	2.9 (0.1) ¹³	3.9 (0.1)	3.7 (0.1) ¹³	4.2 (0.0) ¹³	4.0 (0.1)
Total	3.9 (0.0)	3.7 (0.0)	2.6 (0.0)	2.8 (0.0)	3.9 (0.0)	3.7 (0.0)	4.2 (0.0)	4.0 (0.0)
All Services								
Combat	3.6 (0.0) ¹⁸	3.5 (0.0)	2.8 (0.0) ¹⁸	3.0 (0.0) ^{18,19}	3.7 (0.0) ¹⁸	3.4 (0.1) ¹⁸	3.9 (0.0) ¹⁸	3.6 (0.1) ¹⁸
Combat support	3.8 (0.0) ^{17,19}	3.6 (0.0) ¹⁹	2.7 (0.0) ¹⁷	2.9 (0.0) ¹⁷	3.8 (0.0) ¹⁷	3.6 (0.0) ¹⁷	4.1 (0.0) ¹⁷	3.8 (0.0) ^{17,19}
Combat service support	3.6 (0.1) ¹⁸	3.4 (0.1) ¹⁸	2.7 (0.0)	2.8 (0.0) ¹⁷	3.7 (0.1)	3.5 (0.1)	3.9 (0.1)	3.6 (0.1) ¹⁸
Total	3.7 (0.0)	3.5 (0.0)	2.7 (0.0)	2.9 (0.0)	3.7 (0.0)	3.5 (0.0)	3.9 (0.0)	3.6 (0.0)

Note: Table displays the mean scores among military personnel by Service, unit type, and AUDIT score who reported workplace climate measures on a scale from 1 to 5, where 1 is “dissatisfied,” “very inaccurate,” or “very untrue” and 5 is “satisfied,” “very accurate,” or “very true.” The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of unit type and workplace climate are given in Sections 2.7.1 and 2.7.7, respectively.

^aThe Alcohol Use Disorder Identification Test (AUDIT) score.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Horizontal Cohesion, Q88g–h and Q89a–f; Job Dissatisfaction, Q88a–f; Quality of Work Life, Q15a–c and Q15g–h; Vertical Cohesion, Q15d–f).

Table 4.3.3 Workplace Climate, by Service and Deployment Status

Service/Deployment Status	Workplace Climate Measure			
	Horizontal Cohesion	Job Dissatisfaction	Quality of Work Life	Vertical Cohesion
Army				
Combat deployed	3.4 (0.1)	2.8 (0.0) ²	3.5 (0.1)	3.7 (0.1)
Noncombat deployed	3.5 (0.0)	3.0 (0.0) ^{1,3}	3.5 (0.0)	3.6 (0.1) ³
Not deployed	3.5 (0.1)	2.8 (0.1) ²	3.6 (0.1)	3.8 (0.1) ²
Total	3.5 (0.0)	2.9 (0.0)	3.5 (0.0)	3.7 (0.1)
Navy				
Combat deployed	3.6 (0.0)	2.8 (0.0) ⁷	3.6 (0.0) ^{6,7}	3.8 (0.1)
Noncombat deployed	3.7 (0.0)	2.8 (0.0) ⁷	3.7 (0.1) ⁵	3.9 (0.0)
Not deployed	3.7 (0.0)	2.7 (0.0) ^{5,6}	3.8 (0.0) ⁵	3.9 (0.0)
Total	3.7 (0.0)	2.7 (0.0)	3.7 (0.0)	3.9 (0.0)
Marine Corps				
Combat deployed	3.7 (0.0) ¹⁰	2.8 (0.0) ¹¹	3.5 (0.0) ^{10,11}	3.8 (0.0) ^{10,11}
Noncombat deployed	3.7 (0.0) ⁹	2.8 (0.0) ¹¹	3.6 (0.0) ^{9,11}	3.9 (0.0) ^{9,11}
Not deployed	3.7 (0.0)	2.7 (0.0) ^{9,10}	3.8 (0.0) ^{9,10}	4.0 (0.0) ^{9,10}
Total	3.7 (0.0)	2.8 (0.0)	3.7 (0.0)	3.9 (0.0)
Air Force				
Combat deployed	3.8 (0.0)	2.7 (0.0) ¹⁵	3.8 (0.0)	4.1 (0.0)
Noncombat deployed	3.8 (0.0)	2.8 (0.0) ¹⁵	3.8 (0.1) ¹⁵	4.1 (0.1) ¹⁵
Not deployed	3.9 (0.0)	2.6 (0.0) ^{13,14}	3.9 (0.0) ¹⁴	4.2 (0.0) ¹⁴
Total	3.8 (0.0)	2.7 (0.0)	3.9 (0.0)	4.1 (0.0)
All Services				
Combat deployed	3.6 (0.0) ¹⁹	2.8 (0.0) ¹⁹	3.6 (0.0) ¹⁹	3.8 (0.1) ¹⁹
Noncombat deployed	3.6 (0.0)	2.9 (0.0) ¹⁹	3.6 (0.0) ¹⁹	3.8 (0.1) ¹⁹
Not deployed	3.7 (0.0) ¹⁷	2.7 (0.0) ^{17,18}	3.7 (0.0) ^{17,18}	4.0 (0.0) ^{17,18}
Total	3.6 (0.0)	2.8 (0.0)	3.6 (0.0)	3.8 (0.0)

Note: Table displays the mean scores among military personnel by Service and deployment status who reported workplace climate factors on a scale from 1 to 5, where 1 is “dissatisfied,” “very inaccurate,” or “very untrue” and 5 is “satisfied,” “very accurate,” or “very true.” The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of deployment status and workplace climate are given in Sections 2.7.1 and 2.7.7, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Horizontal Cohesion, Q88g–h and Q89a–f; Job Dissatisfaction, Q88a–f; Quality of Work Life, Q15a–c and Q15g–h; Vertical Cohesion, Q15d–f).

dissatisfaction than personnel that were not deployed. Combat deployed Sailors reported significantly lower QOWL than their noncombat deployed and not deployed counterparts. Air Force personnel that were noncombat deployed reported significantly lower QOWL than not deployed personnel.

Table 4.3.4 examined mean score differences between unit deployment status (by Service) on problem drinking, as measured by the AUDIT score (AUDIT < 8 vs. AUDIT ≥ 8) on horizontal cohesion, job dissatisfaction, QOWL, and vertical cohesion. Mean scores were compared within the Services among categories of deployment status.

Among problem drinkers (AUDIT ≥ 8), all aspects of unit cohesion were more negative (i.e., horizontal cohesion and vertical cohesion were lower) for combat deployed than noncombat or not deployed personnel. Combat deployed Soldiers reported significantly lower horizontal cohesion than those that had not deployed.

Sailors that were noncombat deployed reported higher horizontal cohesion than combat deployed and not deployed personnel. Combat deployed Sailors reported significantly lower QOWL than those that were noncombat deployed and not deployed. Deployed Sailors (combat and noncombat deployed) who were

Table 4.3.4

Workplace Climate, by Service, Deployment Status, and AUDIT Score^a

Service/Deployment Status	Workplace Climate Measure and AUDIT Score							
	Horizontal Cohesion		Job Dissatisfaction		Quality of Work Life		Vertical Cohesion	
	AUDIT < 8	AUDIT ≥ 8	AUDIT < 8	AUDIT ≥ 8	AUDIT < 8	AUDIT ≥ 8	AUDIT < 8	AUDIT ≥ 8
Army								
Combat deployed	3.5 (0.1)	3.3 (0.1) ³	2.8 (0.0)	2.9 (0.1) ²	3.6 (0.1)	3.3 (0.1)	3.8 (0.1)	3.4 (0.1)
Noncombat deployed	3.6 (0.0)	3.4 (0.1)	2.9 (0.0) ³	3.1 (0.0) ¹	3.5 (0.1) ³	3.4 (0.1)	3.6 (0.1) ³	3.5 (0.1) ³
Not deployed	3.6 (0.1)	3.5 (0.1) ¹	2.7 (0.1) ²	2.9 (0.1)	3.7 (0.1) ²	3.4 (0.1)	3.9 (0.0) ²	3.6 (0.1) ²
Total	3.6 (0.0)	3.4 (0.0)	2.8 (0.0)	3.0 (0.0)	3.6 (0.0)	3.4 (0.1)	3.8 (0.1)	3.5 (0.1)
Navy								
Combat deployed	3.8 (0.0)	3.5 (0.1) ⁶	2.7 (0.0) ⁷	2.9 (0.0)	3.8 (0.0)	3.3 (0.1) ^{6,7}	4.0 (0.1)	3.5 (0.1)
Noncombat deployed	3.7 (0.0)	3.7 (0.0) ^{5,7}	2.7 (0.0) ⁷	2.9 (0.0)	3.8 (0.0)	3.6 (0.1) ⁵	3.9 (0.0)	3.7 (0.1)
Not deployed	3.7 (0.0)	3.6 (0.0) ⁶	2.6 (0.0) ^{5,6}	2.8 (0.0)	3.8 (0.0)	3.6 (0.0) ⁵	4.0 (0.0)	3.7 (0.1)
Total	3.7 (0.0)	3.6 (0.0)	2.7 (0.0)	2.9 (0.0)	3.8 (0.0)	3.5 (0.0)	4.0 (0.0)	3.7 (0.1)
Marine Corps								
Combat deployed	3.7 (0.0) ^{10,11}	3.6 (0.0)	2.7 (0.0)	2.9 (0.0) ¹¹	3.7 (0.0) ¹¹	3.4 (0.0) ¹¹	4.0 (0.0) ^{10,11}	3.6 (0.1) ¹¹
Noncombat deployed	3.8 (0.0) ⁹	3.6 (0.0)	2.7 (0.0) ¹¹	2.9 (0.0) ¹¹	3.8 (0.0) ¹¹	3.5 (0.0) ¹¹	4.1 (0.0) ⁹	3.7 (0.0) ¹¹
Not deployed	3.8 (0.0) ⁹	3.7 (0.0)	2.6 (0.0) ¹⁰	2.8 (0.0) ^{9,10}	3.9 (0.0) ^{9,10}	3.7 (0.0) ^{9,10}	4.1 (0.0) ⁹	3.9 (0.0) ^{9,10}
Total	3.8 (0.0)	3.7 (0.0)	2.7 (0.0)	2.9 (0.0)	3.8 (0.0)	3.5 (0.0)	4.1 (0.0)	3.8 (0.0)
Air Force								
Combat deployed	3.9 (0.0)	3.7 (0.1)	2.7 (0.0) ¹⁵	2.8 (0.1)	3.9 (0.0)	3.7 (0.1)	4.2 (0.0)	4.0 (0.1)
Noncombat deployed	3.8 (0.1)	3.8 (0.1)	2.7 (0.0) ¹⁵	2.8 (0.1) ¹⁵	3.8 (0.1) ¹⁵	3.7 (0.1)	4.1 (0.1)	3.9 (0.1)
Not deployed	3.9 (0.0)	3.8 (0.0)	2.6 (0.0) ^{13,14}	2.7 (0.0) ¹⁴	4.0 (0.0) ¹⁴	3.8 (0.0)	4.2 (0.0)	4.0 (0.1)
Total	3.9 (0.0)	3.7 (0.0)	2.6 (0.0)	2.8 (0.0)	3.9 (0.0)	3.7 (0.0)	4.2 (0.0)	4.0 (0.0)
All Services								
Combat deployed	3.6 (0.1)	3.4 (0.1) ^{18,19}	2.8 (0.0) ¹⁹	2.9 (0.0) ¹⁸	3.7 (0.1)	3.4 (0.0) ^{18,19}	3.9 (0.1)	3.6 (0.1) ¹⁹
Noncombat deployed	3.7 (0.0)	3.6 (0.0) ¹⁷	2.8 (0.0) ¹⁹	3.0 (0.0) ^{17,19}	3.7 (0.0) ¹⁹	3.5 (0.0) ¹⁷	3.8 (0.1) ¹⁹	3.6 (0.1) ¹⁹
Not deployed	3.7 (0.0)	3.6 (0.0) ¹⁷	2.7 (0.0) ^{17,18}	2.9 (0.0) ¹⁸	3.8 (0.0) ¹⁸	3.6 (0.1) ¹⁷	4.0 (0.0) ¹⁸	3.8 (0.1) ^{17,18}
Total	3.7 (0.0)	3.5 (0.0)	2.7 (0.0)	2.9 (0.0)	3.7 (0.0)	3.5 (0.0)	3.9 (0.0)	3.6 (0.0)

Note: Table displays the mean scores among military personnel by Service, deployment status, and AUDIT score who reported workplace climate factors on a scale from 1 to 5, where 1 is “dissatisfied,” “very inaccurate,” or “very untrue” and 5 is “satisfied,” “very accurate,” or “very true.” The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of deployment status and workplace climate are given in Sections 2.7.1 and 2.7.7, respectively.

^aThe Alcohol Use Disorder Identification Test (AUDIT) score.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Horizontal Cohesion, Q88g–h and Q89a–f; Job Dissatisfaction, Q88a–f; Quality of Work Life, Q15a–c and Q15g–h; Vertical Cohesion, Q15d–f).

nonproblem drinkers (AUDIT < 8) reported significantly higher job dissatisfaction than Sailors that had not deployed.

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4.4 Culture of Alcohol and Tobacco Use

Schein (1985) and Ott (1989) described a model of organizational culture where the foundation of culture is based on underlying assumptions that are shared intentionally and unintentionally among members of the group. Shared values and beliefs emerge from the underlying assumptions—both of which are largely unobserved. The third component of culture is the artifacts that serve as the outward evidence of assumptions and values/beliefs. Artifacts are products and behaviors such as ceremonies, practices, norms, rituals, symbols, and traditions. Levin's (1991) four qualities of culture, tailored to the military by Dunivin (1994), state that culture is (1) learned from previous generations (e.g., during military recruit training), (2) broadly shared by its members (e.g., saluting), (3) adaptive to conditions in which people live (e.g., racial and gender integration), and (4) symbols that help people create order and make sense of their world (e.g., rank, insignia, and unique Service, job, or unit jargon). Understanding these elements of organizational culture is essential in isolating unit-level influences on alcohol and tobacco use among military personnel.

With an understanding of culture on the broader context, research on culture in the military setting demonstrates the relation between culture, alcohol use, and tobacco use among military personnel. Federman et al. (2000) demonstrated that among military women, deployment was positively associated with heavy alcohol use. Among military men, deployment was positively associated with cigarette use, nonheavy alcohol use, and

heavy alcohol use. Ames et al. (2007) highlighted the effect of culture and deployment on alcohol use among Navy personnel. Results indicated that social norms for deployment liberty drinking were associated with various levels of frequent and heavy drinking for deployed male and female Sailors.

This section explores the impact of culture on alcohol and tobacco use through several facets—cultural artifacts such as administrative and policy influences affecting alcohol use, perceived drinking norms, drinking location (on and off base), and availability and acceptability of tobacco use. All analyses of unit-level cultural influences on alcohol and tobacco use were conducted by unit type—combat, combat support, and combat service support. Specific research questions addressed in this section include the following: (1) How do administrative and policy factors vary among different unit types and Services? (2) What aspects of cultural norms vary among different unit types and Services? (3) How does drinking location vary by unit type and Service for on- and off-base housing? (4) How do attitudes toward the perceived availability and acceptability of tobacco use vary by unit type and Service. In terms of Levin’s (1991) four qualities of culture, survey questions only address the first qualities of culture—that culture is learned from previous generations and broadly shared by its members. Results for all tables are reported in percentages of respondents from each Service and unit type that “agreed” or “strongly agreed” with the statements about military culture and alcohol/tobacco use.

4.4.1 *Administrative/Policy Influences on Alcohol Use, by Service and Unit Type*

Unit culture toward alcohol use can be understood by the overt artifacts of culture—administrative policy and installation- and unit-level enforcement of these policies. Across all Services, results indicated that there were no significant differences by unit type in the alcohol policy in the barracks, enforcement of barracks’ alcohol policy, and perceptions of factors limiting alcohol use (Table 4.4.1).

Results indicate that there were significant differences at the Service level by unit type with regard to alcohol in the barracks, routine barracks inspections, and fear of military consequences. Soldiers and Marines in combat units perceived fewer limitations than those in combat support units whereas those in Air Force combat support units reported significantly lower oversight in the barracks. Significantly more participants from Army and Marine Corps combat units than combat support units reported no limit on alcohol in the barracks (Army, 22.4% and 13%, respectively; Marine Corps, 4.2% and 2.2%, respectively). The pattern of combat support units reporting lower percentages of respondents reporting no limit on alcohol in the barracks continued with Air Force units. Significantly more personnel from combat service support units compared with combat support units reported no limit on alcohol in the barracks (67.9% and 52.5%, respectively). Similarly, when asked about routine barracks inspections, those from combat support and combat service support units reported significantly more inspections than those from combat units (27.3%, 22.6%, and 10.4%, respectively). The pattern among Air Force units continued—significantly fewer personnel from Air Force combat units reported a fear of military consequences or command influences than combat support and combat service support personnel.

4.4.2 *Culture of Drinking, by Service and Unit Type*

When comparing cultural norms by unit type across all Services, only the attitude that “drinking is part of being in the military” was significantly different. As shown in Table 4.4.2, significantly more participants from combat units than combat support units reported that drinking is part of the military (37.9% and 33.7%, respectively). Worth noting is that drinking was not required to fit in; overall, only 14.7% reported that it was hard to fit in if one did not drink. At a Service level, significantly more personnel from Army, Air Force, and Marine Corps combat units endorsed the attitude that drinking is part of the military when compared with respondents from combat support units. Significantly more Sailors from

Table 4.4.1 Administrative/Policy influences on Alcohol Use, by Service and Unit Type

Service/Unit Type	Amount of Alcohol Permitted in Barracks ^a			Alcohol Policy Enforcement in Barracks ^a		Limiting Influences	
	Six Pack of Beer	Case of Beer/Bottle of Liquor	No Limit on Alcohol	Routine/Regular Inspection	Not Enforced	Fear of Military Consequences	Command Influences
Army							
Combat	58.4 (2.8)	49.7 (2.6)	22.4 (3.0) ²	23.9 (2.7) ²	27.0 (3.1)	15.3 (0.8) ²	5.3 (0.6)
Combat support	61.9 (7.9)	43.7 (7.8)	13.0 (2.8) ¹	17.3 (1.3) ¹	25.0 (1.3)	12.2 (0.6) ¹	3.2 (1.4)
Combat service support	66.4 (4.8)	50.9 (3.5)	14.2 (3.3)	22.6 (6.3)	28.1 (6.6)	14.9 (1.4)	6.3 (0.6)
Total	60.9 (2.5)	49.8 (2.0)	19.6 (2.6)	23.3 (2.6)	27.2 (2.8)	15.1 (0.7)	5.6 (0.5)
Navy							
Combat	62.0 (5.9) ⁷	+ (+)	+ (+)	+ (+)	34.0 (6.5)	20.3 (1.1)	8.0 (0.8)
Combat support	46.3 (6.7)	+ (+)	+ (+)	44.1 (6.4)	25.2 (5.7)	20.4 (1.0)	9.6 (0.6)
Combat service support	41.7 (4.4) ⁵	47.1 (6.4)	42.7 (6.4)	35.9 (5.0)	27.7 (4.8)	22.2 (0.9)	8.4 (0.5)
Total	47.6 (3.6)	46.3 (4.5)	43.0 (4.2)	40.1 (3.7)	27.9 (3.0)	21.2 (0.6)	8.7 (0.4)
Marine Corps							
Combat	83.3 (4.2)	23.0 (2.3)	4.2 (0.6) ¹⁰	35.5 (3.6)	10.8 (2.3)	15.6 (1.3)	6.0 (0.6)
Combat support	87.9 (2.4)	18.1 (1.7)	2.2 (0.6) ⁹	38.7 (2.9)	8.4 (1.0) ¹¹	16.5 (0.9)	6.6 (0.6)
Combat service support	82.9 (2.3)	24.3 (4.0)	4.8 (1.9)	32.1 (5.2)	12.4 (1.8) ¹⁰	15.3 (0.8)	5.3 (0.6)
Total	84.8 (2.1)	21.5 (1.4)	3.6 (0.5)	35.9 (2.2)	10.3 (1.2)	15.9 (0.6)	6.1 (0.3)
Air Force							
Combat	50.0 (5.4)	+ (+)	61.3 (7.9)	10.4 (1.7) ^{14,15}	+ (+)	10.3 (0.7) ^{14,15}	1.9 (0.2) ^{14,15}
Combat support	47.6 (3.4) ¹⁵	54.4 (4.1) ¹⁵	52.5 (3.7) ¹⁵	27.3 (2.3) ¹³	27.8 (3.5)	17.1 (0.7) ¹³	4.8 (0.4) ¹³
Combat service support	61.1 (4.1) ¹⁴	73.2 (3.0) ¹⁴	67.9 (2.8) ¹⁴	22.6 (2.2) ¹³	41.2 (6.0)	14.6 (1.3) ¹³	3.8 (0.7) ¹³
Total	51.4 (2.1)	60.1 (2.2)	57.5 (2.0)	24.6 (1.6)	33.0 (2.3)	15.8 (0.6)	4.3 (0.3)
All Services							
Combat	62.5 (2.5)	45.5 (2.5)	21.1 (2.6)	26.0 (2.3)	25.0 (2.6)	15.3 (0.7)	5.3 (0.5)
Combat support	61.4 (2.9)	40.3 (3.4)	30.9 (3.9)	32.5 (2.2)	21.3 (2.2)	17.0 (0.6)	5.8 (0.4)
Combat service support	65.1 (3.2)	49.7 (2.9)	23.3 (4.1)	25.4 (3.9)	27.6 (4.3)	16.1 (0.9)	6.2 (0.4)
Total	63.0 (1.6)	45.6 (1.4)	23.9 (1.7)	27.3 (1.6)	25.0 (1.7)	16.0 (0.4)	5.7 (0.3)

Note: Table displays the percentage of military personnel by Service and unit type reporting amount of alcohol permitted in the barracks, alcohol policy enforcement in the barracks, and installation factors that limit alcohol consumption. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of unit type and administrative/policy influences on alcohol use are given in Sections 2.7.1 and 2.7.6, respectively.

^aLimited to personnel living in barracks/dormitory.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Amount of Alcohol Permitted in Barracks, Q17; Alcohol Policy Enforcement in Barracks, Q13 and Q18; Military Consequences Limit Drinking, Q40d; Command Influences Limit Drinking, Q40i).

Table 4.4.2

Culture of Drinking, by Service and Unit Type

Perceived Drinking Norms

Service/Unit Type	Hard to Fit In	Part of This Installation	Part of the Military	Only Recreation Available	Encouraged to Drink	Nonalcoholic Beverages Not Always Available
Army						
Combat	13.5 (1.2)	18.6 (1.8)	37.0 (2.1) ²	16.2 (1.5) ^{2,3}	20.0 (1.9)	15.3 (0.8)
Combat support	13.4 (1.8)	20.0 (4.7)	28.5 (0.6) ^{1,3}	8.7 (3.2) ¹	16.2 (1.2)	12.8 (2.5)
Combat service support	12.2 (1.9)	13.8 (2.0)	34.9 (2.0) ²	12.2 (1.1) ¹	16.5 (1.4)	17.6 (2.3)
Total	13.1 (0.9)	17.1 (1.3)	36.0 (1.5)	14.6 (1.0)	18.7 (1.3)	15.9 (1.0)
Navy						
Combat	11.0 (1.4)	16.6 (2.6)	33.2 (1.6) ⁷	9.3 (1.8) ⁶	15.5 (2.3)	13.2 (0.8) ⁶
Combat support	14.2 (1.0)	16.2 (1.6)	32.8 (1.3) ⁷	13.8 (0.5) ^{5,7}	17.8 (0.5)	16.0 (0.8) ^{5,7}
Combat service support	11.3 (1.2)	12.3 (1.5)	27.9 (1.3) ^{5,6}	9.9 (1.4) ⁶	16.9 (1.2)	12.7 (0.8) ⁶
Total	12.2 (0.7)	14.6 (0.9)	30.7 (0.8)	11.1 (0.8)	16.9 (0.7)	14.0 (0.5)
Marine Corps						
Combat	20.6 (0.9) ¹¹	28.4 (1.5) ¹¹	44.4 (1.3) ^{10,11}	18.8 (2.0)	32.1 (1.4) ¹¹	18.6 (0.9)
Combat support	20.7 (1.0) ¹¹	26.2 (1.5)	40.4 (1.4) ⁹	19.5 (1.5)	28.7 (1.5)	17.7 (0.9)
Combat service support	16.4 (1.5) ^{9,10}	22.0 (1.6) ⁹	36.6 (2.1) ⁹	16.1 (1.3)	25.3 (1.3) ⁹	17.1 (1.5)
Total	19.7 (0.6)	26.1 (0.9)	41.0 (1.0)	18.5 (0.9)	29.2 (0.9)	17.9 (0.6)
Air Force						
Combat	18.2 (1.9)	24.8 (4.1)	37.8 (1.4) ¹⁴	7.1 (1.8) ¹⁵	28.4 (3.2) ¹⁴	12.0 (1.0)
Combat support	14.4 (1.2)	19.5 (1.8) ¹⁵	31.0 (0.7) ¹³	10.7 (1.0) ¹⁵	20.7 (1.4) ¹³	13.4 (0.8)
Combat service support	20.6 (3.7)	34.3 (6.0) ¹⁴	35.8 (2.7)	19.1 (3.5) ^{13,14}	28.3 (4.4)	12.1 (1.4)
Total	15.8 (0.8)	22.3 (1.2)	32.6 (0.8)	11.4 (0.9)	22.8 (1.2)	13.0 (0.6)
All Services						
Combat	14.7 (0.9)	20.3 (1.5)	37.9 (1.7) ¹⁸	15.7 (1.2)	22.0 (1.5)	15.5 (0.7)
Combat support	16.0 (0.8)	21.0 (1.1)	33.7 (0.7) ¹⁷	13.4 (0.9)	22.2 (1.0)	14.9 (0.6)
Combat service support	13.5 (1.3)	16.7 (1.7)	34.1 (1.3)	13.1 (0.9)	18.9 (1.3)	16.2 (1.5)
Total	14.7 (0.5)	19.5 (0.8)	35.7 (0.8)	14.3 (0.6)	21.2 (0.8)	15.5 (0.6)

Note: Table displays the percentage of military personnel by Service and unit type who indicated that they “agreed” or “strongly agreed” with statements about acceptability of consuming alcohol. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of unit type and perceived drinking norms are given in Sections 2.7.1 and 2.7.6, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Perceived Drinking Norms, Q19a–g).

combat units perceived that drinking is part of the military than combat service support units.

4.4.3 Location of Drinking on Base, by Service and Unit Type

Generally, across participants from all Services, Table 4.4.3 shows that on-base drinking appeared to occur most frequently in the barracks (13.8%) or in on-base housing (13.2%). Significantly more respondents from combat units reported drinking in the barracks or on-base housing than those from combat support units. Most notably, Marines from all unit types had higher reports of drinking in the barracks (22.8%) than Soldiers (14.5%), Sailors (8.6%), and Air Force personnel (6.1%). Differences among Air Force unit types continued the theme that combat service support units were different from combat units in that they reported drinking more frequently in the barracks and the enlisted club. Combat service support units more frequently reported drinking in the recreational facility than respondents from combat support units.

4.4.4 Location of Drinking off Base, by Service and Unit Type

When asked about locations off base where drinking occurs, as presented in Table 4.4.4, the most frequent off-base locations were in homes (29.6%), bars (26.6%), and restaurants (18.8%). When unit type was examined, respondents from combat units (20.5%) reported significantly more drinking in restaurants than combat support (17.7%) or combat service support respondents (16.9%). Those from combat and combat support units reported drinking in bars significantly more frequently (28.2% and 28.1%, respectively) than those in combat service support units (22.9%). Unit-level differences were most apparent among Marines, where respondents in combat units reported drinking significantly more often in restaurants, hotel rooms, and recreational facilities than those in combat support or combat service support units. Also, those from Marine combat units reported drinking significantly more often in bars than respondents from combat service support units and reported drinking in housing off base than those from combat support units.

4.4.5 Perceived Availability and Acceptability of Tobacco Use, by Service and Unit Type

As seen in Table 4.4.5, across all Services components, results indicated that although a majority of participants had friends that used tobacco products (61.5%) and believed the availability of tobacco on the installation made it easy to smoke (57.3%), fewer participants believed that smoking was part of being in the military (26.7%). Significantly more respondents from combat units reported having friends that use tobacco products, believed the availability of tobacco made it easy to smoke, and that smoking was part of being in the military than those from combat support and combat service support units. At the Service level, more Marines (67.3%) and Soldiers (66.6%) reported having friends that used tobacco products than Sailors (56.7%) and Airmen (44.6%). Similarly, more Marines (26.6%) and Soldiers (30.6%) believed that smoking was part of being in the military than Sailors (22.6%) and Airmen (18.4%). At a Service level, no clear pattern emerged when comparing unit types.

4.4.6 References

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Table 4.4.3

Location of Drinking On Base, by Service and Unit Type

Service/Unit Type	Drinking Location on Base					
	Barracks	Enlisted Club	Officers' Club	Other On-Base Club	Recreational Facility	On-Base Housing
Army						
Combat	15.5 (1.6)	3.2 (0.4)	1.5 (0.3) ²	2.9 (0.5)	5.4 (0.8) ²	15.7 (1.4) ²
Combat support	+ (+)	1.9 (1.7)	0.4 (0.4) ¹	2.6 (0.9)	1.2 (1.1) ^{1,3}	8.6 (1.0) ^{1,3}
Combat service support	13.0 (1.7)	2.9 (0.5)	1.2 (0.5)	2.4 (0.4)	3.8 (0.5) ²	13.0 (1.4) ²
Total	14.5 (1.2)	3.1 (0.3)	1.3 (0.2)	2.7 (0.3)	4.7 (0.6)	14.6 (1.0)
Navy						
Combat	11.7 (4.2)	4.5 (1.7)	1.3 (0.3)	3.0 (1.0)	5.3 (1.2)	15.3 (2.2) ⁶
Combat support	9.8 (1.1) ⁷	4.3 (0.8)	1.5 (0.5)	3.5 (0.7)	5.5 (0.6)	9.4 (1.2) ⁵
Combat service support	6.2 (0.9) ⁶	2.7 (0.6)	1.0 (0.2)	3.1 (0.7)	4.9 (0.8)	11.5 (1.3)
Total	8.6 (1.0)	3.6 (0.5)	1.2 (0.2)	3.2 (0.4)	5.2 (0.5)	11.5 (0.8)
Marine Corps						
Combat	23.2 (1.6)	7.6 (1.6)	2.3 (0.5) ¹¹	3.1 (0.5) ¹⁰	8.2 (0.7)	12.7 (1.8)
Combat support	22.8 (1.3)	9.5 (1.2)	2.3 (0.3) ¹¹	5.0 (0.6) ⁹	7.0 (0.6)	15.7 (0.9)
Combat service support	22.2 (1.8)	7.0 (1.7)	1.2 (0.2) ^{9,10}	3.7 (0.9)	6.9 (1.1)	14.2 (1.5)
Total	22.8 (0.8)	8.3 (0.7)	2.1 (0.2)	4.0 (0.3)	7.4 (0.4)	14.3 (0.6)
Air Force						
Combat	4.7 (1.6) ¹⁵	1.7 (0.5) ¹⁵	2.9 (1.1) ¹⁵	5.9 (2.3)	3.6 (0.8)	7.0 (1.6)
Combat support	4.7 (0.9) ¹⁵	3.2 (0.6)	0.9 (0.2)	2.9 (0.6)	3.5 (0.5) ¹⁵	10.2 (1.2) ¹⁵
Combat service support	14.4 (4.0) ^{13,14}	7.3 (2.2) ¹³	0.7 (0.2) ¹³	10.3 (4.0)	6.6 (1.4) ¹⁴	5.9 (1.0) ¹⁴
Total	6.1 (0.7)	3.6 (0.4)	1.1 (0.2)	4.4 (0.6)	4.0 (0.4)	9.2 (0.8)
All Services						
Combat	15.8 (1.2) ¹⁸	3.8 (0.5)	1.7 (0.2)	3.1 (0.4)	5.7 (0.6)	14.8 (1.1) ¹⁸
Combat support	10.8 (1.0) ¹⁷	5.0 (0.6)	1.3 (0.1)	3.5 (0.4)	4.6 (0.4)	11.5 (0.7) ¹⁷
Combat service support	13.3 (1.2)	3.9 (0.6)	1.1 (0.3)	3.5 (0.6)	4.6 (0.4)	12.2 (0.9)
Total	13.8 (0.7)	4.2 (0.3)	1.4 (0.1)	3.3 (0.2)	5.1 (0.3)	13.2 (0.6)

Note: Table displays the percentage of military personnel by Service and unit type who reported that they “always” or “usually” drank at on-base locations. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of drinking locations and unit type are given in Sections 2.7.1 and 2.7.6, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Location of Drinking on Base, Q39a-f).

Table 4.4.4 Location of Drinking Off Base, by Service and Unit Type

Service/Unit Type	Drinking Location off Base					
	House off Base	Bar	Restaurant	Hotel Room	Public Location	Recreational Facility
Army						
Combat	30.8 (1.7)	25.9 (1.8) ³	19.7 (1.5) ^{2,3}	7.8 (0.8)	5.3 (0.9) ²	8.1 (1.0) ²
Combat support	31.1 (2.3)	28.9 (4.1) ³	15.7 (1.1) ¹	4.4 (2.3)	1.2 (1.0) ^{1,3}	3.3 (1.4) ¹
Combat service support	27.6 (3.7)	19.5 (2.3) ^{1,2}	14.8 (1.3) ¹	8.2 (1.1)	4.9 (0.6) ²	6.2 (1.2)
Total	29.8 (1.6)	23.9 (1.5)	18.0 (1.2)	7.8 (0.7)	5.1 (0.6)	7.3 (0.8)
Navy						
Combat	30.2 (2.1)	29.5 (3.2) ⁷	17.4 (2.6)	6.8 (1.1)	6.4 (1.0)	8.0 (0.8)
Combat support	33.7 (2.0)	28.1 (0.9) ⁷	20.8 (1.6)	9.3 (1.3)	7.7 (0.6) ⁷	8.7 (0.9)
Combat service support	30.8 (1.3)	22.6 (0.9) ^{5,6}	19.5 (1.3)	6.8 (0.7)	5.1 (0.8) ⁶	6.5 (0.7)
Total	31.7 (0.9)	26.0 (0.7)	19.5 (0.9)	7.7 (0.6)	6.3 (0.5)	7.6 (0.5)
Marine Corps						
Combat	31.7 (3.1) ¹⁰	40.4 (2.0) ¹¹	27.7 (1.1) ^{10,11}	14.6 (0.8) ^{10,11}	11.4 (0.5)	12.4 (0.7) ^{10,11}
Combat support	20.3 (1.8) ⁹	37.5 (1.9)	21.8 (1.0) ⁹	11.6 (0.7) ⁹	10.5 (0.7)	9.4 (0.6) ⁹
Combat service support	27.3 (2.9)	33.0 (1.7) ⁹	24.0 (0.9) ⁹	11.0 (0.9) ⁹	9.4 (0.9)	8.7 (0.7) ⁹
Total	25.9 (1.1)	37.6 (1.1)	24.4 (0.8)	12.6 (0.5)	10.6 (0.4)	10.3 (0.4)
Air Force						
Combat	35.5 (2.9) ¹⁵	26.6 (2.1)	16.2 (1.2)	4.6 (0.6) ¹⁵	2.5 (0.5) ¹⁵	6.3 (0.6)
Combat support	32.7 (1.4) ¹⁵	22.8 (1.6)	15.2 (0.8)	4.3 (0.3) ¹⁵	2.5 (0.3) ¹⁵	5.2 (0.4)
Combat service support	22.3 (4.1) ^{13,14}	29.9 (2.9)	16.0 (1.3)	8.1 (1.5) ^{13,14}	4.5 (0.7) ^{13,14}	6.3 (1.0)
Total	31.6 (1.0)	24.3 (1.2)	15.4 (0.6)	4.9 (0.3)	2.8 (0.2)	5.5 (0.4)
All Services						
Combat	31.1 (1.4)	28.2 (1.4) ¹⁹	20.5 (1.2) ^{18,19}	8.5 (0.6)	6.1 (0.7)	8.6 (0.8) ¹⁸
Combat support	29.3 (1.1)	28.1 (1.1) ¹⁹	17.7 (0.6) ¹⁷	7.0 (0.5)	5.3 (0.5)	6.7 (0.4) ¹⁷
Combat service support	27.5 (2.3)	22.9 (1.6) ^{17,18}	16.9 (0.9) ¹⁷	8.4 (0.7)	5.5 (0.4)	6.6 (0.7)
Total	29.6 (0.9)	26.6 (0.9)	18.8 (0.7)	8.1 (0.4)	5.7 (0.3)	7.5 (0.4)

Note: Table displays the percentage of military personnel by Service and unit type who reported that they “always” or “usually” drank at off-base locations. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of unit type and drinking location are given in Sections 2.7.1 and 2.7.6, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Location of Drinking off Base, Q39g-1).

Table 4.4.5 Culture of Tobacco Use, by Service and Unit Type

Service/Unit Type	Perceived Availability and Acceptability		
	Availability Makes It Easy to Smoke	Most Military Friends Use Tobacco Products	Smoking Is Part of Being in the Military
Army			
Combat	61.0 (1.9) ²	70.2 (1.9) ³	32.6 (1.8) ³
Combat support	65.9 (0.6) ^{1,3}	63.5 (3.0)	29.5 (1.5)
Combat service support	55.5 (2.5) ²	59.9 (2.3) ¹	26.9 (1.3) ¹
Total	59.4 (1.5)	66.6 (1.5)	30.6 (1.3)
Navy			
Combat	57.8 (2.6)	58.6 (4.3)	22.9 (0.5) ^{6,7}
Combat support	53.1 (1.3)	60.8 (1.5) ⁷	25.7 (1.3) ^{5,7}
Combat service support	52.1 (1.4)	52.8 (2.3) ⁶	20.1 (0.9) ^{5,6}
Total	53.6 (0.8)	56.7 (1.4)	22.6 (0.7)
Marine Corps			
Combat	60.9 (1.8)	67.6 (3.3)	28.5 (1.2) ¹¹
Combat support	60.4 (1.1)	67.0 (1.4)	26.7 (0.8) ¹¹
Combat service support	62.0 (1.1)	67.3 (2.3)	23.3 (1.3) ^{9,10}
Total	60.9 (0.7)	67.3 (1.4)	26.6 (0.7)
Air Force			
Combat	50.2 (2.0)	30.5 (2.4) ^{14,15}	15.9 (2.4)
Combat support	50.3 (0.9)	47.6 (2.2) ¹³	18.9 (0.8)
Combat service support	50.8 (2.0)	42.6 (4.2) ¹³	18.5 (1.3)
Total	50.3 (0.7)	44.6 (1.8)	18.4 (0.7)
All Services			
Combat	60.2 (1.5) ^{18,19}	67.0 (1.6) ^{18,19}	30.6 (1.4) ^{18,19}
Combat support	54.6 (0.9) ¹⁷	55.9 (1.4) ¹⁷	22.7 (0.7) ¹⁷
Combat service support	55.3 (1.6) ¹⁷	58.0 (1.6) ¹⁷	24.5 (0.9) ¹⁷
Total	57.3 (0.8)	61.5 (0.9)	26.7 (0.7)

Note: Table displays the percentage of military personnel by Service and unit type who indicated that they “agreed” or “strongly agreed” with statements about availability and acceptability of tobacco products. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of unit type and perceived availability and acceptability of tobacco are given in Sections 2.7.1 and 2.7.6, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Perceived Availability, and Acceptability, Q67a–c).

Schein, E. H. (1985). *Organizational culture and leadership: A dynamic view*. San Francisco, CA: Jossey-Bass.

4.5 Summary

4.5.1 Alcohol Use

4.5.1.1 Alcohol Use, by Service and Unit Type

- The highest rates of alcohol use were reported by combat units, with 80.4% reporting alcohol use in the past 30 days.
- Marine Corps combat units reported the highest and Army combat units reported the lowest alcohol use.

- The highest average number of drinking days was reported for combat units, the least for combat support units.
- Among Army units, combat units had higher rates of alcohol use, heavy alcohol use, average daily ounces of ethanol, the largest number of drinks on one occasion, the largest number of drinks to feel intoxicated, and the highest prevalence of feeling drunk two or more times.
- Although Navy combat units were more likely to report higher rates of alcohol use and more days drinking, Navy combat support units reported the highest rates of heavy alcohol use, average daily ounces of ethanol, largest number of drinks, highest

number of drinks to feel drunk, and highest rate of feeling drunk two or more times.

- In the Marine Corps units, combat units reported the highest indicators of use, with the exception of number of drinks to feel drunk.
- Air Force combat service support units had high rates of heavy use, days heavy drinking, average daily ounces, largest number of drinks, number of drinks to feel drunk, and reporting feeling drunk two or more times.

4.5.1.2 *Problem Drinking Levels, by Service and Unit Type*

- Overall, combat units reported the highest levels of harmful drinking, possible dependence, and drinking at hazardous level or above.
- Marine Corps combat unit respondents reported the highest levels of harmful drinking. More than 54.1% of Marine Corps units reported drinking at hazardous levels or above.

4.5.1.3 *Negative Effects of Alcohol Use, by Service and Unit Type*

- Overall, combat support units reported higher rates of administrative action than combat service support units. However, combat units reported significantly more serious consequences than those in combat support units.
- Army combat and combat support units reported high rates of administrative action. Combat support units also were more likely to report productivity loss.
- Among Marine Corps units, combat support units reported significantly more administrative actions.
- Navy and Air Force combat units reported significantly less serious consequences for their drinking.

4.5.2 *Tobacco Use*

The following are key findings about the unit-level influences on tobacco use:

- Overall, personnel in combat units were more likely to use tobacco than personnel in combat support or combat service support units. These findings varied somewhat by Service.
- Rates of nicotine dependence were consistent with tobacco use patterns. Higher levels of dependence occurred for persons in combat units.

- Personnel whose supervisors use tobacco are significantly more likely to use one or more types of tobacco than personnel whose supervisors do not use tobacco.
- Personnel whose supervisors use tobacco are significantly more likely to believe that smoking is necessary to fit in with the unit, that smoking is part of being in the military, or to have started tobacco use since joining the military.

4.5.3 *Workplace Climate*

4.5.3.1 *Effect of Workplace Climate on Alcohol Use, by Service and Unit Type*

- Across all Services components when comparing combat and combat support units, combat units had significantly lower horizontal cohesion, quality of work life, and vertical cohesion, and higher job dissatisfaction.
- When comparing combat and combat support units at the Service level, Air Force and Navy combat units reported significantly higher horizontal cohesion than combat support units.
- When comparing combat, combat support, and combat service support units for Navy and Marine Corps, job dissatisfaction was higher among combat and combat support units than combat service support units. The direction of unit-level differences were reversed for Air Force units.
- Marine Corps combat units had significantly lower QOWL than combat service support units.
- Among Air Force combat units the direction of unit-level differences for vertical cohesion were reversed with combat units reporting greater vertical cohesion than combat support and combat service support units.

4.5.3.2 *Effect of Workplace Climate on Alcohol Use, by Service and Deployment Status*

- Across All Services components when comparing combat, combat support, and combat service support units, among nonproblem drinkers cohesion was significantly higher in combat support than in combat and combat service support units.
- Problem drinkers reported significantly higher horizontal cohesion in combat support units when compared with combat service support units.
- Across All Services components when comparing combat and combat support units, nonproblem drinking respondents reported higher job

dissatisfaction for combat units compared with other combat support units.

- Across All Services components for nonproblem and problem drinkers, QOWL and vertical cohesion were both significantly higher for combat support units than combat units.
- Air Force problem drinkers in combat units reported significantly higher horizontal cohesion than Air Force respondents in combat support or combat service support units.
- Soldiers with high drinking scores in combat units reported significantly higher job dissatisfaction than those in combat service support units.
- Sailors that were nonproblem drinkers reported significantly lower QOWL in combat units than combat service support units.

4.5.3.3 *Workplace Climate, by Service and Deployment Status*

- Across All Services components, respondents that were combat deployed reported significantly lower horizontal cohesion than those who had not deployed.
- Across All Services components, deployed personnel reported significantly higher job dissatisfaction, lower QOWL, and lower vertical cohesion than those who had not deployed.
- Soldiers that were noncombat deployed reported significantly higher job dissatisfaction than combat deployed and not deployed Soldiers.
- Deployed Sailors, Marines, and Air Force personnel reported significantly higher job dissatisfaction than personnel that had not deployed.
- Combat deployed Sailors reported significantly lower QOWL than their noncombat deployed and not deployed counterparts.
- Air Force personnel that were noncombat deployed reported significantly lower QOWL than not deployed personnel.

4.5.3.4 *Workplace Climate, by Service, Deployment Status, and AUDIT Score*

- Across All Services components, problem drinkers, aspects of unit cohesion were more negative (i.e., horizontal cohesion and vertical cohesion were lower) for combat deployed than noncombat or not deployed personnel.

- Among problem drinkers, combat deployed Soldiers reported significantly lower horizontal cohesion than those that were not deployed.
- Among problem drinkers, Sailors that were noncombat deployed reported higher horizontal cohesion than combat deployed and not deployed personnel.
- Among problem drinkers, combat deployed Sailors reported significantly lower QOWL than those that were noncombat deployed and not deployed.
- Among nonproblem drinkers, deployed Sailors (combat and noncombat deployed) reported significantly higher job dissatisfaction than Sailors that were not deployed.

4.5.4 *Culture of Alcohol and Tobacco Use*

4.5.4.1 *Administrative/Policy Influences on Alcohol Use, by Service and Unit Type*

- Soldiers and Marines in combat units perceived fewer limitations on alcohol policy in the barracks than those in combat support units.
- Air Force combat support units reported significantly lower oversight in the barracks.
- Personnel from combat support and combat service support units reported significantly more inspections than those from combat units.

4.5.4.2 *Culture of Drinking, by Service and Unit Type*

- Significantly more participants from combat units compared with combat support units reported that drinking is part of the military.
- Interestingly, drinking was not required to fit in at social functions, with only 14.7% of personnel reporting that it was hard to fit in if one did not drink.

4.5.4.3 *Location of Drinking on Base, by Service and Unit Type*

- Personnel from combat units reported drinking in the barracks or on-base housing significantly more than those from combat support units.
- Marines from all unit types had higher reports of drinking in the barracks than personnel in the other Service branches.

4.5.4.4 Location of Drinking off Base, by Service and Unit Type

- Combat and combat support unit personnel reported drinking in bars significantly more frequently than those in combat service support units.
- Among Marines, personnel in combat units reported drinking significantly more often in restaurants, hotel rooms, and recreational facilities than those in combat support or combat service support units.

4.5.4.5 Perceived Availability and Acceptability of Tobacco Use, by Service and Unit Type

- Significantly more respondents from combat units reported having friends that use tobacco products, believed the availability of tobacco made it easy to smoke, and that smoking was part of being in the military than those from combat support and combat service support units.

Chapter 5: Individual-Level Influences

Research with college populations has identified adolescent deviant behavior, depression, gender, impulsiveness, deviant coping, and a propensity for risk-taking as being associated with heavy drinking and tobacco use (Bates & Labouvie, 1997; MacDonald & Fleming, 1991; Smith & Brown, 1999), and given the age range of the high-risk population to be studied in this research (i.e., 18 to 25), it is likely these same variables constitute risk factors for military personnel. Additional intrapersonal risk variables for alcohol and tobacco use disorders include positive expectancies, low self-efficacy, and early initiation of substance use (Newcomb & Felix-Ortiz, 1992; Hawkins, Catalano, & Miller, 1992).

Stress is an intrapersonal factor with strong implications for alcohol and tobacco use. Military men and women experience a wide range of stressors as part of their military work assignments and duties. Stressors may result from the physical or mental challenges required of the job, exposure to trauma associated with combat, or conflicts between military and family responsibilities. Women may experience additional stressors as a result of being in a predominantly male environment or being exposed to sexual harassment (Bray, Fairbank, & Marsden, 1999). A large-scale study of active-duty military personnel showed that among men, stress was associated with an increased risk of heavy drinking (work stress only), illicit drug use (work and family stress), and cigarette use (work and family stress). Among women, the stress of being in an overwhelmingly male environment was associated with increased odds of illicit drug and cigarette use (Bray, Fairbank, & Marsden, 1999). Other studies have indicated strong links between trauma exposure, victimization, and posttraumatic stress disorder (PTSD) and alcohol use problems (Logan, Walker, Cole, & Leukefeld, 2002).

This chapter examines individual-level influences on alcohol and tobacco use. It first reports findings for alcohol use, by Service and gender, problem drinking levels, negative effects of drinking, and reasons for

drinking. Section 5.1 concludes with a discussion of alcohol use by Service and combat exposure. This is followed by an examination of tobacco use, including situational influences on use, reasons for use, and tobacco use rates by Service and deployment status. Next, Chapter 5 discusses the effects of stress and coping on the use of alcohol and tobacco. In this section, the effects of stress, combat exposure, and primary coping style are reported. Finally, Chapter 5 presents findings on military culture and alcohol and tobacco use. The effect of administrative/policy influences, military culture, and primary locations for drinking are discussed, followed by a brief look at the impact of perceived availability and acceptability of tobacco products.

5.1 Alcohol Use

Alcohol use among military personnel is implicated in lowered work performance, accidents and injury, and serious problems with others and the law. These factors detract from military readiness. Although heavy alcohol use (defined in military studies as drinking five or more drinks per typical drinking occasion at least once a week) decreased slightly between 1980 and 2005, from 21% to 19%, it remains at problem levels and is particularly common among young enlisted personnel (Bray et al., 2006). High rates of heavy drinking are found among military personnel with a high school education or less, males, unmarried persons, and junior enlisted personnel. In 2005, about 8% of military personnel experienced serious consequences from their alcohol use, 13% had experienced productivity loss, and about 3% could be defined as possibly being dependent on alcohol. Negative effects associated with alcohol use were more common among heavy drinkers than less frequent drinkers. For example, compared with moderate drinkers, heavy drinkers were more likely to experience serious consequences from alcohol use, productivity loss, and symptoms of dependence.

Heavy alcohol use is common among young adults in the civilian household population, from whom military personnel are drawn. Findings from the 1998 and 2004

National Household Survey on Drug Abuse (NHSDA) indicate that about 32% of young adults aged 18 to 25 were binge drinkers (i.e., drank five or more drinks per occasion on at least 1 day in the past 30 days) and about 14% were heavy drinkers (i.e., drank five or more drinks per occasion on 5 or more days in the past 30 days) (Office of Applied Studies [OAS], in press). Both binge drinking and heavy drinking were relatively stable among young adults during the 1990s, although both increased significantly between 1997 and 1998. Binge drinkers were particularly common among young adult males, Whites, those with a college education, and those employed full-time.

A likely mechanism driving changes in alcohol abuse among military personnel over time is the combination of risk and protective factors operating within the military environment. A variety of risk and protective factors for alcohol abuse and alcohol-related health and social problems have been identified in previous studies of adolescent and young adult populations, including studies focusing on such high-risk groups as college undergraduates (Costa, Jessor, & Turbin, 1999; Gfroerer, Greenblatt, & Wright, 1997; Hawkins, Catalano, & Miller, 1992; Johnston et al., 1999; Paschall & Flewelling, 1999; Wechsler et al., 1998). This chapter will examine the effects of sociodemographic characteristics on alcohol use and consequences.

5.1.1 Alcohol Use, by Service and Gender

Table 5.1.1 presents alcohol use among male and female members of the four Service branches measured in a variety of ways for the month prior to survey completion. A high percentage of both men and women reported using alcohol within the past month. While the percentage of men reporting any alcohol use was greater than for women, the percentages reporting any alcohol use were high across genders and military branches (ranging from 63.9% to 85.1%). Gender differences were noted across every alcohol measure.

Men and women in the Marine Corps reported the highest percentages of use (85.1% and 71.4%, respectively). When asked about the number of drinking days during the past 30 days, Marine Corps personnel

reported the most days, with males reporting a mean of 11.0 days and females reporting a mean of 7.4 days. The greatest incidence of heavy alcohol use (i.e., ≥ 5 drinks per occasion for men and ≥ 4 drinks per occasion for women at least once a week) was for the Marine Corps overall (40.5%), with 43.2% of males and 23.0% of females engaging in heavy drinking during the past month. When queried concerning the average daily ounces of ethanol consumed, men in the Marine Corps reported an average of 6.2 ounces, while women reported an average of 3.7 daily ounces.

With respect to the largest number of drinks on one occasion during the past month, Marine Corps personnel reported the highest prevalence for men (11.9 drinks) and women (6.8 drinks). The number of drinks to feel drunk among the Marine Corps was highest overall at 8.2 drinks, followed by 7.5 drinks for Army personnel, 6.9 for Navy personnel, and 6.2 for the Air Force. Finally, the percentages of persons in the Marine Corps who reported feeling drunk two or more times in the past 30 days was 59.9%, with significantly more men reporting frequent drunkenness than women (62.1% vs. 43.2%). This consistency in gender differences held for the other military branches. In general, members of the Air Force and Navy reported less drinking across all drinking variables than members of the Marine Corps and Army.

5.1.2 Problem Drinking Levels, by Service and Gender

Table 5.1.2 presents percentages of male and female military personnel in each Service who reported drinking at levels defined as hazardous, harmful, possibly alcohol dependent, and at or above hazardous levels. Overall, 35.9% of all personnel were drinking at or above hazardous drinking levels (i.e., Alcohol Use Disorder Identification Test [AUDIT] score ≥ 8). Across all Services, prevalence rates for females were lower in all categories than for males. Both male and female members of the Marine Corps reported the highest percentages of hazardous, harmful, and possible dependence drinking. The largest prevalence by Marine Corps personnel was within the hazardous range (33.4%). However, the percentages across all drinking

Table 5.1.1

Estimates of Alcohol Use, Past 30 Days, by Service and Gender

Service/Gender	Alcohol Measure							Felt Drunk 2 or More Times
	Any Alcohol Use	Days Drinking	Heavy Alcohol Use	Days Heavy Drinking	Average Daily Ounces Ethanol	Largest Number of Drinks	Number of Drinks to Feel Drunk	
Army								
Male	78.3 (1.5) ²	9.7 (0.3) ²	31.4 (1.7) ²	14.5 (0.3) ²	5.3 (0.2) ²	9.8 (0.3) ²	7.7 (0.2) ²	49.0 (1.8) ²
Female	63.9 (3.7) ¹	5.7 (0.6) ¹	15.4 (2.0) ¹	9.4 (0.5) ¹	2.9 (0.2) ¹	5.2 (0.5) ¹	5.6 (0.3) ¹	26.6 (3.1) ¹
Total	76.6 (1.5)	9.3 (0.3)	29.5 (1.7)	14.2 (0.3)	5.1 (0.2)	9.3 (0.3)	7.5 (0.2)	46.3 (1.8)
Navy								
Male	81.3 (0.6) ⁵	9.2 (0.2) ⁵	25.8 (0.8) ⁵	13.5 (0.2) ⁵	4.1 (0.1) ⁵	8.3 (0.2) ⁵	7.1 (0.2) ⁵	45.1 (0.9) ⁵
Female	72.5 (1.6) ⁴	6.6 (0.2) ⁴	16.4 (1.1) ⁴	10.3 (0.3) ⁴	2.8 (0.2) ⁴	5.1 (0.2) ⁴	4.9 (0.2) ⁴	31.8 (1.7) ⁴
Total	79.7 (0.7)	8.8 (0.1)	24.2 (0.8)	13.2 (0.2)	3.9 (0.1)	7.8 (0.2)	6.9 (0.1)	42.7 (0.9)
Marine Corps								
Male	85.1 (1.0) ⁸	11.0 (0.2) ⁸	43.2 (1.4) ⁸	14.7 (0.3) ⁸	6.2 (0.2) ⁸	11.9 (0.2) ⁸	8.2 (0.2) ⁸	62.1 (1.6) ⁸
Female	71.4 (2.1) ⁷	7.4 (0.5) ⁷	23.0 (2.5) ⁷	12.3 (0.8) ⁷	3.7 (0.2) ⁷	6.8 (0.3) ⁷	5.7 (0.3) ⁷	43.2 (2.2) ⁷
Total	83.8 (0.7)	10.3 (0.2)	40.5 (1.2)	14.1 (0.2)	6.0 (0.1)	11.7 (0.2)	8.2 (0.1)	59.9 (1.2)
Air Force								
Male	79.3 (1.2) ¹¹	8.2 (0.2) ¹¹	22.7 (1.2) ¹¹	11.6 (0.3)	3.4 (0.1) ¹¹	7.3 (0.2) ¹¹	6.4 (0.1) ¹¹	42.7 (1.4) ¹¹
Female	67.6 (1.5) ¹⁰	5.8 (0.3) ¹⁰	12.2 (1.4) ¹⁰	10.8 (0.5)	2.6 (0.2) ¹⁰	4.8 (0.2) ¹⁰	4.9 (0.2) ¹⁰	29.6 (1.7) ¹⁰
Total	77.0 (1.0)	7.8 (0.2)	20.7 (1.2)	11.5 (0.3)	3.3 (0.1)	6.9 (0.2)	6.2 (0.1)	40.1 (1.2)
All Services								
Male	79.7 (0.9) ¹⁴	9.5 (0.2) ¹⁴	30.6 (1.0) ¹⁴	14.1 (0.2) ¹⁴	4.9 (0.1) ¹⁴	9.4 (0.2) ¹⁴	7.5 (0.1) ¹⁴	49.0 (1.1) ¹⁴
Female	66.8 (1.8) ¹³	6.1 (0.3) ¹³	15.3 (1.1) ¹³	10.3 (0.3) ¹³	2.9 (0.1) ¹³	5.2 (0.2) ¹³	5.3 (0.2) ¹³	29.7 (1.6) ¹³
Total	78.3 (0.8)	9.2 (0.2)	29.2 (1.0)	13.7 (0.2)	4.8 (0.1)	9.1 (0.2)	7.4 (0.1)	47.1 (1.0)

Note: Table entries for average daily ounces of ethanol, days drinking, days heavy drinking, largest number of drinks, and number of drinks to feel drunk are average values among military personnel by Service and gender. Table entries for any alcohol use, heavy alcohol use, and felt drunk two or more times in the past 30 days are percentages among military personnel by Service and gender. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of alcohol use are given in Section 2.7.3.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Days Drinking, Q24, Q28, and Q31; Days Heavy Drinking, Q24–Q35; Average Daily Ounces of Ethanol, Q24–Q35; Largest Number of Drinks, Q36; Number of Drinks to Feel Drunk, Q38; Heavy Alcohol Use, Q24–Q35; Felt Drunk Two or More Times in Past Month, Q37).

Table 5.1.2 Problem Drinking Levels, by Service and Gender

Service/Gender	Problem Drinking Levels			Hazardous Level or Above ^d
	Hazardous Drinking ^a	Harmful Drinking ^b	Possible Dependence ^c	
Army				
Male	25.4 (1.0) ²	6.3 (0.7) ²	6.0 (0.7) ²	37.6 (1.7) ²
Female	12.9 (2.5) ¹	2.8 (1.2) ¹	2.2 (0.7) ¹	17.9 (3.4) ¹
Total	24.0 (1.0)	5.9 (0.7)	5.5 (0.6)	35.4 (1.8)
Navy				
Male	26.8 (0.9) ⁵	4.3 (0.3) ⁵	4.3 (0.3) ⁵	35.3 (1.0) ⁵
Female	16.1 (1.4) ⁴	2.1 (0.5) ⁴	2.3 (0.4) ⁴	20.5 (1.6) ⁴
Total	24.9 (0.9)	3.9 (0.3)	4.0 (0.3)	32.7 (1.1)
Marine Corps				
Male	34.4 (0.9) ⁸	8.3 (0.7) ⁸	10.1 (0.6) ⁸	52.8 (1.2) ⁸
Female	22.4 (2.7) ⁷	4.4 (1.1) ⁷	4.6 (1.1) ⁷	31.5 (2.8) ⁷
Total	33.4 (0.7)	7.9 (0.5)	9.2 (0.5)	50.5 (1.1)
Air Force				
Male	22.7 (1.0) ¹¹	3.2 (0.3) ¹¹	1.9 (0.2) ¹¹	27.8 (1.2) ¹¹
Female	13.9 (1.6) ¹⁰	1.2 (0.3) ¹⁰	0.7 (0.3) ¹⁰	15.8 (1.9) ¹⁰
Total	21.1 (1.0)	2.9 (0.3)	1.7 (0.2)	25.6 (1.1)
All Services				
Male	26.2 (0.6) ¹⁴	5.7 (0.4) ¹⁴	5.5 (0.4) ¹⁴	37.4 (1.1) ¹⁴
Female	14.5 (1.4) ¹³	2.4 (0.6) ¹³	2.0 (0.4) ¹³	18.9 (1.8) ¹³
Total	25.2 (0.6)	5.4 (0.4)	5.3 (0.3)	35.9 (1.0)

Note: Table displays the percentage of military personnel by Service and gender with problem drinking levels. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level.

^aDefined as an Alcohol Use Disorder Identification Test (AUDIT) score 8–15.

^bDefined as an Alcohol Use Disorder Identification Test (AUDIT) score 16–19.

^cDefined as an Alcohol Use Disorder Identification Test (AUDIT) score ≥ 20.

^dDefined as an Alcohol Use Disorder Identification Test (AUDIT) score ≥ 8.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Problem Drinking Levels, Q20–Q23).

categories for the Marine Corps were significantly higher (50.5%) than for the other three Services (25.6% for the Air Force, 32.7% for the Navy, and 35.4% for the Army).

Possible alcohol dependence was reported by 9.2% of Marine Corps personnel, 5.5% of Army personnel, 4.0% of Navy personnel, and 1.7% of Air Force personnel. In all Services, rates for alcohol dependence were higher among males than among females, with the largest gender difference in the alcohol dependence rate being shown for Marine Corps personnel (10.1% of males and 4.6% of females). Among Army personnel, although lower overall, nearly three times as many males (6.0%) as females (2.2%) acknowledged possible alcohol

dependence. These results may be driven partially by the fact that there are fewer women in the Marine Corps and Army.

5.1.3 Negative Effects of Alcohol Use, by Service and Gender

Table 5.1.3 lists the percentages of Service personnel who reported negative effects of alcohol use defined as administrative action, loss of work productivity, and serious consequences, including but not limited to driving while intoxicated, being arrested for drunken driving, and physical fighting that occurred during the 30 days prior to completing the survey. With respect to serious consequences, Marine Corps personnel reported

Table 5.1.3 Negative Effects of Alcohol Use, by Service and Gender

Service/Gender	Negative Effects		
	Administrative Action	Productivity Loss	Serious Consequences
Army			
Male	9.0 (0.8) ²	16.5 (1.0)	14.2 (1.1)
Female	4.3 (1.5) ¹	13.8 (2.2)	10.9 (1.8)
Total	8.4 (0.8)	16.3 (1.0)	13.8 (1.0)
Navy			
Male	9.3 (0.5) ⁵	13.6 (0.5) ⁵	12.2 (0.6)
Female	4.6 (0.7) ⁴	18.6 (1.0) ⁴	12.8 (1.2)
Total	8.5 (0.4)	14.5 (0.5)	12.3 (0.6)
Marine Corps			
Male	13.2 (0.6) ⁸	18.2 (1.0)	19.4 (0.8)
Female	8.2 (1.8) ⁷	17.3 (1.7)	19.1 (1.6)
Total	12.2 (0.4)	17.5 (0.6)	17.7 (0.6)
Air Force			
Male	8.5 (0.5) ¹¹	10.5 (0.9)	6.3 (0.6)
Female	2.2 (0.4) ¹⁰	12.5 (1.8)	5.8 (0.8)
Total	7.4 (0.5)	11.0 (0.7)	6.3 (0.5)
All Services			
Male	9.4 (0.5) ¹⁴	15.3 (0.6)	13.2 (0.7) ¹⁴
Female	4.1 (0.8) ¹³	14.4 (1.2)	10.4 (0.9) ¹³
Total	8.9 (0.4)	15.3 (0.6)	12.9 (0.6)

Note: Table displays the percentage of military personnel by Service and gender who reported negative effects of alcohol use. Time period for administrative action is entire military career; for productivity loss and serious consequences, the time period is the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of negative effects of alcohol use are given in Section 2.7.3.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Administrative Action, Q42; Productivity Loss, Q44; Serious Consequences of Alcohol Use, Q43a-i).

the highest prevalence (17.7%), followed by the Army (13.8%), Navy (12.3%), and Air Force (6.3%). Air Force personnel reported the lowest prevalence of negative effects across all three categories. In all Services, the prevalence rates of administrative action reported by women were significantly lower than those reported by men. The most frequently endorsed negative effect for all Services was productivity loss, followed by serious consequences and then administrative action.

5.1.4 Reasons for Drinking, by Service and Drinking Level

Table 5.1.4 provides reasons for drinking among light, moderate, and heavy drinkers across all Service branches. Percentages are provided for four factors: social, peers/culture, feeling/taste, and stress. Overall, social reasons (i.e., celebration, enjoy a party, have fun, be sociable) were the most strongly endorsed (24.0%).

An examination of individual Services revealed that Marine Corps personnel most strongly endorsed social items (32.3%), followed in close succession by Army (23.0%), Navy (21.5%), and Air Force (20.7%) personnel. Few persons acknowledged drinking as a result of peer pressure (3.8%), while a somewhat greater endorsement was given for stress (9.5%) and to relieve boredom (10.7%).

Significant differences were found across all Services and drinking levels, with a greater percentage of heavy drinkers endorsing all reasons when compared with moderate or light drinkers. Drinking to relieve stress was endorsed by 23.8% of heavy drinkers but only 3.6% and 7.9% of light and moderate drinkers, respectively. The most striking finding was that three to nine times as many heavy drinkers compared with light or moderate drinkers indicated that they drank because of peer

Table 5.1.4 Reasons for Drinking, by Service and Drinking Level

Service/Drinking Level	Reason for Drinking			
	Social	Peers/Culture	Feeling/Taste	Stress
Army				
Light	16.6 (1.3) ^{2,3}	1.2 (0.4) ³	2.7 (0.5) ^{2,3}	3.7 (0.7) ^{2,3}
Moderate	24.6 (2.4) ^{1,3}	3.3 (1.1) ³	10.2 (1.8) ^{1,3}	8.8 (1.8) ^{1,3}
Heavy	45.4 (2.7) ^{1,2}	11.2 (1.2) ^{1,2}	31.2 (1.9) ^{1,2}	26.5 (2.4) ^{1,2}
Total	23.0 (1.5)	4.2 (0.5)	11.7 (1.0)	10.5 (1.0)
Navy				
Light	15.3 (0.7) ^{6,7}	1.4 (0.2) ⁷	2.2 (0.2) ^{6,7}	3.7 (0.3) ^{6,7}
Moderate	22.2 (1.4) ^{5,7}	1.6 (0.5) ⁷	5.9 (1.2) ^{5,7}	6.1 (1.0) ^{5,7}
Heavy	46.1 (1.4) ^{5,6}	8.9 (0.9) ^{5,6}	21.3 (1.5) ^{5,6}	18.8 (1.2) ^{5,6}
Total	21.5 (0.7)	3.1 (0.3)	7.0 (0.6)	7.1 (0.4)
Marine Corps				
Light	18.8 (1.0) ^{10,11}	1.6 (0.3) ^{10,11}	4.7 (0.4) ^{10,11}	5.7 (0.5) ^{10,11}
Moderate	30.4 (2.0) ^{9,11}	3.4 (0.6) ^{9,11}	10.8 (1.4) ^{9,11}	10.0 (1.2) ^{9,11}
Heavy	53.6 (1.1) ^{9,10}	10.2 (0.7) ^{9,10}	32.0 (1.1) ^{9,10}	25.2 (1.0) ^{9,10}
Total	32.3 (0.9)	5.2 (0.3)	15.9 (0.6)	13.5 (0.5)
Air Force				
Light	15.8 (1.0) ^{14,15}	0.8 (0.2) ¹⁵	1.0 (0.2) ^{14,15}	2.1 (0.3) ^{14,15}
Moderate	23.6 (1.5) ^{13,15}	1.5 (0.7) ¹⁵	3.7 (1.0) ^{13,15}	4.5 (0.9) ^{13,15}
Heavy	48.1 (1.6) ^{13,14}	5.6 (0.8) ^{13,14}	18.7 (1.3) ^{13,14}	13.6 (1.1) ^{13,14}
Total	20.7 (0.6)	1.8 (0.2)	5.0 (0.5)	4.4 (0.3)
All Services				
Light	16.6 (0.7) ^{18,19}	1.2 (0.2) ^{18,19}	2.5 (0.3) ^{18,19}	3.6 (0.3) ^{18,19}
Moderate	25.1 (1.3) ^{17,19}	2.8 (0.6) ^{17,19}	8.6 (1.0) ^{17,19}	7.9 (1.0) ^{17,19}
Heavy	47.8 (1.5) ^{17,18}	10.0 (0.7) ^{17,18}	28.9 (1.1) ^{17,18}	23.8 (1.3) ^{17,18}
Total	24.0 (0.8)	3.8 (0.3)	10.7 (0.6)	9.5 (0.5)

Note: Table entries for reasons for drinking are percentages among military personnel by Service and drinking level. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of drinking levels and reasons for drinking are given in Section 2.7.3.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Drinking Level, Q24–Q35; Reasons for Drinking, Q41).

pressure or because drinking is part of the military culture.

5.1.5 Negative Effects of Alcohol Use, by Service and Drinking Level

Table 5.1.5 presents data on negative effects of drinking at light, moderate, and heavy drinking levels. Overall, negative effects were more strongly endorsed by heavy drinkers, with 15.4% reporting administrative action, 22.0% endorsing productivity loss, and 12.9% acknowledging serious consequences; these prevalence rates were significantly higher than those for light drinkers.

Among heavy drinkers, the highest rates for serious consequences and productivity loss were among the Army (32.0%, and 22.7%, respectively) and the Marine Corps (31.6%, and 24.0%, respectively). Heavy drinkers in the Navy and Marine Corps endorsed the highest rates of administrative action (15.7% and 19.2%, respectively). Among Air Force personnel, heavy drinkers reported the lowest rates for administrative action (13.9%), productivity loss (16.6%), and serious consequences (6.3%).

Table 5.1.5

Negative Effects of Alcohol Use, by Service and Drinking Level

Service/Drinking Level	Negative Effects		
	Administrative Action	Productivity Loss	Serious Consequences
Army			
Light	7.2 (1.0) ³	13.8 (1.5) ³	6.7 (0.8) ^{2,3}
Moderate	8.6 (1.8) ³	14.3 (1.6) ³	11.6 (1.7) ^{1,3}
Heavy	13.9 (1.5) ^{1,2}	22.7 (1.5) ^{1,2}	32.0 (1.9) ^{1,2}
Total	8.4 (0.8)	16.3 (1.0)	13.8 (1.0)
Navy			
Light	7.0 (0.5) ⁷	12.2 (0.7) ⁷	7.6 (0.5) ^{6,7}
Moderate	7.8 (0.9) ⁷	13.4 (1.1) ⁷	13.5 (1.0) ^{5,7}
Heavy	15.7 (1.0) ^{5,6}	20.6 (1.0) ^{5,6}	26.4 (1.7) ^{5,6}
Total	8.5 (0.4)	14.5 (0.5)	12.3 (0.6)
Marine Corps			
Light	8.7 (0.7) ¹¹	12.4 (0.6) ^{10,11}	9.2 (0.5) ^{10,11}
Moderate	11.0 (1.4) ¹¹	15.7 (1.2) ^{9,11}	11.9 (1.0) ^{9,11}
Heavy	19.2 (0.7) ^{9,10}	24.0 (1.2) ^{9,10}	31.6 (0.9) ^{9,10}
Total	12.2 (0.4)	17.5 (0.6)	17.7 (0.6)
Air Force			
Light	6.1 (0.5) ^{14,15}	9.7 (0.8) ¹⁵	3.5 (0.4) ¹⁵
Moderate	9.7 (1.2) ^{13,15}	10.0 (1.2) ¹⁵	6.1 (1.3) ¹⁵
Heavy	13.9 (1.0) ^{13,14}	16.6 (1.1) ^{13,14}	16.2 (1.6) ^{13,14}
Total	7.4 (0.5)	11.0 (0.7)	6.3 (0.5)
All Services			
Light	7.2 (0.5) ¹⁹	12.5 (0.8) ¹⁹	6.4 (0.4) ^{18,19}
Moderate	9.1 (1.0) ¹⁹	13.6 (0.9) ¹⁹	10.8 (1.0) ^{17,19}
Heavy	15.4 (0.9) ^{17,18}	22.0 (0.9) ^{17,18}	29.2 (1.2) ^{17,18}
Total	8.9 (0.4)	15.3 (0.6)	12.9 (0.6)

Note: Table displays the percentage of military personnel by Service and drinking level who reported negative effects of alcohol use. Time period for administrative action is entire military career; for productivity loss and serious consequences, the time period is the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of drinking levels and negative effects of alcohol use are given in Section 2.7.3.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Drinking Level, Q24–Q35; Administrative Action, Q42; Productivity Loss, Q44; Serious Consequences of Alcohol Use, Q43).

5.1.6 Alcohol Use, by Service and Combat Exposure

The wars in Iraq and Afghanistan are producing a new generation of veterans who are at risk of developing serious mental health problems, including chronic stress disorders and substance use disorders. Based on estimates currently available for 2007, close to 160,000 American troops are serving in Iraq and Afghanistan. Studies have shown that the short-term rates of psychiatric and substance use disorders among this group are higher than in the civilian population and that current returning troops are at high risk of developing

psychiatric disorders, including substance use disorders and PTSD (Hoge et al., 2004). Combat duty is associated with increased utilization of mental health services; a high percentage of personnel meeting the screening criteria for alcohol use disorders, major depression, generalized anxiety, or PTSD; and increased attrition from the military (Hoge et al., 2006).

Across numerous studies, combat-exposed personnel exhibit higher rates of alcohol use disorders. For example, Fischer (1991) found a significant relation between combat exposure and problems with drugs or alcohol abuse following discharge among 1,176 Vietnam

veterans. Exposure to heavy combat more than doubled the risk of reporting a postdischarge substance abuse problem, as compared with those who served but saw no combat in Vietnam. Younger combat veterans, having achieved less developmental stability and personality integration than relatively older Soldiers, are at greater risk for the subsequent emergence of substance abuse problems as a result of their exposure to combat. Nearly 60% of the veterans who were exposed to combat drank excessively at the time of the study, as compared with only 25% of a group of veterans who were not exposed to combat. Data showed that the effects of combat exposure can persist for more than a decade after the stressful events (Branchey et al., 1984). The Iowa Persian Gulf Study Group (1997) found that Gulf War veterans who served in the Persian Gulf theater had significantly higher rates of alcohol abuse compared with those who did not serve in the Persian Gulf theater. Among current military personnel, a recent study found that heavy drinking rates were highest among those who had deployed in the last year compared with those deploying more than 36 months before the survey (Bray et al., 2006; Federman et al., 2000).

5.1.6.1 *Alcohol Use and Combat Exposure*

This section provides eight sets of estimates for each of the Services: (1) any alcohol use, (2) number of days drinking during the past 30 days for drinkers, (3) heavy alcohol use, (4) number of heavy drinking days during the past 30 days for heavy drinkers, (5) average daily ounces of ethanol consumed by drinkers, (6) largest number of drinks on one occasion, (7) number of drinks to feel drunk, and (8) felt drunk two or more times in the past 30 days. It presents unadjusted estimates on these measures for each of the Services by levels of combat exposure (low, moderate, or high). These unadjusted estimates are descriptive only and yield no explanatory information about differences among Services. They do, however, reflect the within-Services differences at the sampled installations for average amount of alcohol consumed by drinkers, the prevalence of heavy alcohol use, and feeling drunk for each of the Services by combat exposure.

More than 80% of all personnel with any combat exposure acknowledged past-month alcohol use. Comparisons of any past-month alcohol use show that rates were lowest among Army (69.0%) and Air Force (78.5%) personnel with low combat exposure and highest among Marine Corps (90.3%) and Navy (85.7%) personnel with high combat exposure (Table 5.1.6). For those with high combat exposure, the total number of drinking days among drinkers during the past month was lowest for Air Force personnel compared with the other Services. With the exception of Army personnel, all Services indicated significantly higher rates of heavy alcohol use among high combat exposure personnel compared with personnel with moderate levels of combat exposure.

With respect to average daily ounces of ethanol consumed by drinkers, only the Army showed higher daily consumption for low versus high combat exposure (5.7 daily ounces vs. 4.9 daily ounces), although the difference was nonsignificant. While the Navy (5.5 daily ounces vs. 3.3 daily ounces), Marine Corps (6.2 daily ounces vs. 5.3 daily ounces), and Air Force (4.3 daily ounces vs. 2.7 daily ounces) showed significantly higher rates for high versus moderate combat exposure, high combat exposure Marine Corps personnel showed the largest number of drinks consumed during one drinking occasion (12.4 drinks).

Among those with high combat exposure, feeling drunk two or more times during the past month was reported by 45.5% of Air Force personnel, 48.2% of Army personnel, 50.5% of Navy personnel, and 65.3% of Marine Corps personnel. The reported number of drinks to feel drunk was highest for Marine Corps personnel with high combat exposure (8.3 drinks) and lowest among Air Force personnel (5.9 drinks) with low combat exposure.

5.1.6.2 *Negative Effects of Alcohol Use, by Service and Combat Exposure*

This section examines the negative effects of alcohol consumption for military personnel by combat exposure level. These negative effects include administrative action, productivity loss, and serious. Results are shown in Table 5.1.7.

Table 5.1.6

Estimates of Alcohol Use, Past 30 Days, by Service and Combat Exposure

Service/Combat Exposure	Alcohol Measure							
	Any Alcohol Use	Days Drinking	Heavy Alcohol Use	Days Heavy Drinking	Average Daily Ounces Ethanol	Largest Number of Drinks	Number of Drinks to Feel Drunk	Felt Drunk 2 or More Times
Army								
Low	69.0 (5.2) ³	8.3 (0.8) ³	29.2 (3.4)	12.6 (1.4) ³	5.7 (0.9)	8.7 (0.9)	6.9 (0.7)	40.8 (3.9)
Moderate	79.2 (3.9)	8.6 (0.7) ³	27.8 (6.8)	14.4 (1.3)	4.5 (0.6)	8.6 (1.1)	6.9 (0.3)	47.1 (5.6)
High	79.9 (1.9) ¹	10.3 (0.4) ^{1,2}	29.4 (2.3)	15.6 (0.5) ¹	4.9 (0.3)	8.9 (0.4)	7.0 (0.2)	48.2 (2.0)
Total	78.5 (1.8)	9.5 (0.3)	29.1 (2.1)	14.7 (0.4)	4.9 (0.2)	9.0 (0.3)	7.0 (0.1)	47.8 (2.0)
Navy								
Low	85.1 (1.3)	9.3 (0.3) ⁷	25.8 (1.8) ⁶	13.3 (0.5) ⁷	3.6 (0.2) ⁷	7.6 (0.3) ⁷	6.5 (0.2) ⁷	45.6 (1.9) ⁶
Moderate	85.7 (1.9)	8.9 (0.6) ⁷	15.9 (2.2) ^{5,7}	+ (+)	3.3 (0.4) ⁷	7.2 (0.4) ⁷	6.3 (0.4) ⁷	39.0 (2.4) ^{5,7}
High	85.7 (2.4)	11.5 (0.7) ^{5,6}	29.7 (3.0) ⁶	17.9 (1.1) ⁵	5.5 (0.6) ^{5,6}	10.9 (0.7) ^{5,6}	9.1 (0.7) ^{5,6}	50.5 (3.7) ⁶
Total	84.0 (1.0)	9.4 (0.2)	24.5 (1.2)	13.7 (0.3)	3.8 (0.2)	8.0 (0.2)	6.7 (0.2)	45.3 (1.3)
Marine Corps								
Low	83.7 (1.3) ^{10,11}	9.7 (0.4) ¹¹	40.7 (1.4) ¹¹	13.7 (0.5) ¹¹	5.9 (0.3)	11.6 (0.4)	8.2 (0.3)	58.8 (2.0) ¹¹
Moderate	88.4 (1.6) ⁹	10.5 (0.7)	40.6 (3.1) ¹¹	14.0 (0.5)	5.3 (0.2) ¹¹	11.1 (0.4) ¹¹	7.7 (0.2) ¹¹	62.8 (2.5)
High	90.3 (1.0) ⁹	11.9 (0.3) ⁹	48.4 (2.1) ^{9,10}	14.9 (0.4) ⁹	6.2 (0.3) ¹⁰	12.4 (0.4) ¹⁰	8.3 (0.2) ¹⁰	65.3 (1.9) ⁹
Total	87.1 (0.9)	10.8 (0.2)	43.5 (1.4)	14.3 (0.3)	5.9 (0.2)	11.9 (0.3)	8.2 (0.2)	62.7 (1.4)
Air Force								
Low	78.5 (1.7) ¹⁴	7.5 (0.3) ^{14,15}	17.7 (1.7) ¹⁵	11.8 (0.6)	2.9 (0.1) ¹⁵	6.5 (0.2) ¹⁵	5.9 (0.2) ¹⁵	39.7 (2.1)
Moderate	84.4 (2.3) ¹³	8.7 (0.4) ¹³	18.7 (2.3) ¹⁵	11.9 (0.7)	2.7 (0.2) ¹⁵	6.8 (0.3) ¹⁵	5.9 (0.3) ¹⁵	42.1 (3.1)
High	79.3 (2.4)	9.9 (0.7) ¹³	27.5 (2.3) ^{13,14}	13.2 (0.8)	4.3 (0.4) ^{13,14}	8.2 (0.6) ^{13,14}	7.3 (0.6) ^{13,14}	45.5 (3.3)
Total	81.4 (1.3)	8.2 (0.2)	20.6 (1.4)	11.8 (0.3)	3.1 (0.1)	7.0 (0.2)	6.1 (0.2)	43.1 (1.7)
All Services								
Low	78.5 (1.4)	8.4 (0.2) ¹⁹	25.8 (1.1) ¹⁹	12.8 (0.4) ¹⁹	4.2 (0.2) ¹⁹	8.1 (0.2) ¹⁹	6.7 (0.2) ¹⁹	44.5 (1.4) ¹⁹
Moderate	82.5 (2.0)	9.0 (0.4) ¹⁹	27.0 (3.7)	13.8 (0.7)	4.1 (0.3) ¹⁹	8.5 (0.6)	6.9 (0.2)	48.1 (3.0)
High	81.6 (1.5)	10.6 (0.3) ^{17,18}	32.3 (1.8) ¹⁷	15.4 (0.4) ¹⁷	5.1 (0.2) ^{17,18}	9.5 (0.3) ¹⁷	7.3 (0.2) ¹⁷	50.7 (1.6) ¹⁷
Total	81.0 (1.0)	9.5 (0.2)	29.8 (1.2)	14.2 (0.3)	4.7 (0.1)	9.1 (0.2)	7.1 (0.1)	49.5 (1.2)

Note: Table entries for average daily ounces of ethanol, days drinking, days heavy drinking, largest number of drinks, and number of drinks to feel drunk are average values among military personnel by Service and lifetime combat exposure level. Table entries for any alcohol use, heavy alcohol use, and felt drunk two or more times in the past 30 days are percentages among military personnel by Service and lifetime combat exposure level. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of alcohol use and combat exposure are given in Sections 2.7.3 and 2.7.5, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Days Drinking, Q24, Q28, and Q31; Days Heavy Drinking, Q24–Q35; Average Daily Ounces of Ethanol, Q24–Q35; Largest Number of Drinks, Q36; Number of Drinks to Feel Drunk, Q38; Heavy Alcohol Use, Q24–Q35; Drunk Two or More Times in Past Month, Q37; Combat Exposure, Q86).

Table 5.1.7 Negative Effects of Alcohol Use, by Service and Combat Exposure

Service/Combat Exposure	Negative Effects		
	Administrative Action	Productivity Loss	Serious Consequences
Army			
Low	12.4 (3.1)	11.0 (2.3)	9.5 (2.8)
Moderate	8.3 (2.4)	16.1 (2.0)	10.6 (3.1)
High	8.6 (1.3)	16.4 (1.6)	14.9 (1.5)
Total	8.7 (1.0)	16.2 (1.1)	13.4 (1.2)
Navy			
Low	10.9 (1.1)	11.4 (0.9) ⁷	9.6 (0.9) ⁷
Moderate	10.7 (1.9)	14.5 (2.4)	12.0 (2.1) ⁷
High	8.5 (1.4)	22.4 (3.7) ⁵	19.9 (3.1) ^{5,6}
Total	9.8 (0.7)	14.2 (0.9)	11.9 (0.8)
Marine Corps			
Low	11.9 (0.9)	14.6 (1.4) ¹¹	15.4 (1.3) ¹¹
Moderate	14.1 (1.5)	16.8 (1.5) ¹¹	16.3 (1.5) ¹¹
High	14.0 (1.0)	22.0 (1.7) ^{9,10}	22.0 (1.2) ^{9,10}
Total	12.7 (0.5)	18.1 (0.9)	17.7 (0.7)
Air Force			
Low	6.2 (0.6) ¹⁵	9.3 (1.0)	6.2 (1.0) ¹⁵
Moderate	7.3 (1.3)	10.1 (1.3)	5.1 (1.0) ¹⁵
High	10.2 (1.6) ¹³	12.6 (2.1)	12.3 (1.9) ^{13,14}
Total	7.7 (0.6)	11.4 (0.8)	6.4 (0.6)
All Services			
Low	9.4 (0.8)	11.0 (0.7) ^{18,19}	9.2 (0.8) ¹⁹
Moderate	9.2 (1.3)	14.6 (1.1) ¹⁷	10.3 (1.7) ¹⁹
High	9.6 (1.0)	17.2 (1.3) ¹⁷	16.0 (1.1) ^{17,18}
Total	9.4 (0.6)	15.5 (0.7)	12.7 (0.7)

Note: Table displays the percentage of military personnel by Service and region who reported negative effects of alcohol use. Time period for administrative action is entire military career; for productivity loss and serious consequences, the time period is the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of negative effects of alcohol use and combat exposure are given in Sections 2.7.3 and 2.7.5, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Administrative Action, Q42; Productivity Loss, Q44; Serious Consequences of Alcohol Use, Q43; Combat Exposure, Q86).

The rates for all three negative effects were lowest among Air Force personnel with low levels of combat exposure, with 6.2% reporting having had administrative action taken against them, 9.3% having experienced productivity loss, and 6.2% having experienced three or more serious consequences. For Air Force personnel, a larger percentage of personnel with high combat exposure (10.2%) reported having had administrative action taken than personnel with low combat exposure (6.2%).

Navy prevalence rates for negative effects showed that serious consequences were more than doubled when

comparing low (9.6%) versus high (19.9%) combat exposure levels. A similar pattern was demonstrated for productivity loss (11.4% vs. 22.4%). Only administrative action yielded a different, though nonsignificant pattern for Navy personnel: those with high combat exposure had the least instances of administrative action.

Army personnel did not show significant differences in any of the negative effects by combat exposure levels. A similar trend to that found for Navy personnel was present: persons with high combat exposure levels had the lowest prevalence rates for administrative action.

Marine Corps personnel showed the highest rates of administrative action (14.0%), productivity loss (22.0%), and serious consequences (22.0%) among persons with high combat exposure levels. A significantly larger percentage of high combat exposure Marine Corps personnel reported having experienced three or more serious consequences and having productivity loss when compared with Marine Corps personnel with low or moderate exposure levels.

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5.2 Tobacco Use

The Centers for Disease Control studied data from the Teenage Attitudes and Practices Survey (TAPS-II) to examine the development of nicotine addiction among young people aged 10 to 22. Respondents who had smoked or used smokeless tobacco during the past 30 days were asked if they smoked because “it relaxes or calms me” and if they used because “it’s really hard to quit.” Their reported frequency of use of tobacco because it is relaxing or because it is hard to quit increased in relation to increasing lifetime use, frequency of use, and intensity of use. This pattern was similar regardless of age category (10 to 18 years and 19 to 22 years).

They also reported on attempts to quit smoking in this population and symptoms of nicotine withdrawal. The study indicated that respondents who smoked six or more cigarettes per day were more likely than those who smoked five or fewer cigarettes per day to report difficulty concentrating, feeling more irritable, and craving cigarettes during a previous quit attempt. Even those who reported smoking five or fewer cigarettes per day reported that they had experienced some symptoms of withdrawal during a previous attempt to stop smoking.

5.2.1 Individual Influences on Tobacco Use

Table 5.2.1 presents the estimates of individual-level influences on tobacco use by Service. Estimates are provided for the percentages of tobacco-using respondents who indicated that they were “likely” or “extremely likely” to use different types of tobacco in the following situations:

- when they were with others who were using tobacco
- when they were offered tobacco
- while drinking alcohol
- when anxious or stressed
- when drinking coffee
- when they need something to get through the day

As shown, the two most frequently mentioned influences on cigarette use were when drinking alcohol (80.5%), when with others using tobacco (80.0%), and when anxious or stressed (79.5%). Respondents were least likely to engage in tobacco use when drinking coffee (49.0%).

The most common reasons for using smokeless tobacco were when stressed or anxious (69.9%) and when with others who were using tobacco (67.7%). Not surprisingly smokeless users were least likely to report use when drinking coffee (39.0%).

Cigar smokers were more likely to use when drinking alcohol (62.5%) and when with others who were using tobacco products (60.2%). They were least likely to use when drinking coffee (35.6%).

Table 5.2.1

Individual Influences on Tobacco Use, by Service and Type of Tobacco Use

Service/Tobacco Use	Influence					When Need Something to Get through the Day
	When with Others Who Are Using Tobacco	When Offered Tobacco	When Drinking Alcohol	When Anxious or Stressed	When Drinking Coffee	
Army						
Any cigarette use	80.1 (1.4)	76.1 (1.4)	79.4 (1.2)	80.6 (1.4)	52.4 (1.6)	71.1 (1.5)
Smokeless tobacco use	67.8 (2.2)	63.3 (2.3)	66.8 (2.1)	70.4 (2.1)	39.8 (2.0)	60.0 (2.5)
Cigar use	65.8 (2.1)	63.7 (1.6)	67.3 (2.1)	67.1 (1.8)	42.5 (1.4)	60.0 (2.0)
Navy						
Any cigarette use	78.0 (1.2)	70.9 (1.2)	80.9 (1.2)	77.6 (1.2)	46.4 (1.5)	65.2 (1.2)
Smokeless tobacco use	63.2 (2.3)	56.8 (2.3)	67.9 (1.8)	67.7 (1.9)	34.3 (2.2)	57.2 (1.8)
Cigar use	51.8 (1.4)	47.3 (1.7)	55.8 (1.7)	50.7 (1.4)	30.3 (1.5)	41.1 (1.4)
Marine Corps						
Any cigarette use	78.0 (0.9)	72.5 (1.1)	80.7 (0.8)	77.7 (0.9)	43.2 (0.8)	67.5 (1.0)
Smokeless tobacco use	69.8 (1.4)	65.9 (1.6)	72.8 (1.4)	72.7 (1.4)	43.4 (1.3)	64.3 (1.5)
Cigar use	58.5 (1.4)	53.7 (1.6)	61.5 (1.2)	58.3 (1.4)	31.5 (0.9)	50.2 (1.4)
Air Force						
Any cigarette use	84.1 (1.0)	73.9 (1.5)	84.2 (1.2)	78.5 (1.1)	43.6 (1.8)	67.2 (1.6)
Smokeless tobacco use	65.2 (1.8)	57.3 (2.2)	65.5 (1.9)	63.5 (2.4)	29.9 (2.4)	52.2 (1.6)
Cigar use	50.2 (2.0)	41.6 (2.3)	53.3 (1.9)	46.8 (2.5)	22.8 (2.0)	37.7 (2.3)
All Services						
Any cigarette use	80.0 (0.9)	74.7 (0.9)	80.5 (0.8)	79.5 (0.9)	49.0 (1.0)	69.4 (1.0)
Smokeless tobacco use	67.7 (1.4)	62.7 (1.4)	68.0 (1.3)	69.9 (1.3)	39.0 (1.3)	59.8 (1.5)
Cigar use	60.2 (1.2)	56.2 (1.1)	62.5 (1.2)	60.1 (1.2)	35.6 (1.0)	52.2 (1.3)

Note: Table displays percentages of military personnel by Service and type of tobacco use who indicated that they were “somewhat likely” or “extremely likely” to use tobacco because of specified influences. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of tobacco use and influences on tobacco use are given in Section 2.7.4.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Any Cigarette Use, Q52 and Q57; Smokeless Tobacco Use, Q71; Cigar Use, Q80; When with Others Who Are Using Tobacco, Q69a; When Offered Tobacco, Q69c; When Drinking Alcohol, Q69d; When I Am Anxious or Stressed, Q69e; When I Am Drinking Coffee, Q69f; When I Need Something to Get through the Day, Q69g).

5.2.2 *Situational Influences on Tobacco Use*

Table 5.2.2 presents descriptions of several situational influences on tobacco use, including the following:

- when I am angry
- when things are not going my way
- when I need to be alert
- when I am deployed

Overall, 72.1% reported that they were likely to use cigarettes when angry and 69.7% when things were not going their way, suggesting an emotional component to tobacco use. The last two items are job-related individual situations that may influence tobacco use—when need to be alert and when deployed. More than half (57.8%) indicated they used cigarettes when they needed to be alert and 66.1% reported using cigarettes when deployed. Smokeless tobacco and cigars were also used by more than half of persons for most of these situations. For example, 60.8% reported using smokeless tobacco when deployed. The table also shows some Service variation in these behaviors. For example, the Army reported the highest percentage of cigarette use when deployed (71.4%) and the Navy reported the lowest percentage (54.1%).

5.2.3 *Reasons for Tobacco Use*

Respondents were provided with a list of reasons people sometimes give for using tobacco. Table 5.2.3 shows the percentage of respondents who indicated that they always or usually used tobacco for some reason. As with younger persons in general in the United States., 90.4% of respondents reported using cigarettes to relieve stress. Other frequently reported reasons included to get a break from work (83.2%) and for enjoyment (83.2%). Respondents were least likely to mention using tobacco to avoid gaining weight (30.1%). Like cigarette smokers, smokeless users and cigar users were more apt to use tobacco to relieve stress (82.8% and 73.7%, respectively).

A possible unanticipated consequence of the no-smoking ban in buildings is going out of doors to take a smoke break from work. Note that 83.2% of cigarette

smokers indicated this as a reason to smoke compared with 69.1% of those who use smokeless tobacco. Productivity losses from those taking a break from work were mentioned often in the focus groups. This suggests that the military will need to find a way to curtail these breaks or make sure that taking breaks does not serve as a reward for smokers.

5.2.4 *Tobacco Use, by Service and Deployment Status*

The 2005 Survey of Health Related Behaviors (Bray et al., 2006) reported higher cigarette smoking, heavy smoking, and nicotine dependence in personnel who had been deployed one or more times compared with those who had not been deployed in the past 3 years. Other studies also have found a positive relation between deployments and tobacco use (Federman, Bray, & Kroutil, 2000; Forgas et al., 1996). Forgas and colleagues, for example, examined tobacco use among 1,915 Navy personnel deployed to the Persian Gulf and found both an increased use of smokeless tobacco and cigarettes among users and an initiation of use among nonusers. Boredom and stress were the most frequently reported reasons for smoking, and the ship store was most frequently reported as the place for obtaining cigarettes.

Although the unadjusted estimates present in the current report are descriptive only and yield no explanatory information about differences among Services, they do provide more information about the possible impact of deployment on tobacco use. The current study examined correlates of tobacco use and deployment status based on whether a person had been combat deployed, noncombat deployed, or not deployed (a more complete description of these combat categories is presented in Chapter 2, Section 2.7.1).

Table 5.2.4 presents tobacco use during the past 30 days by Service and deployment status for these three groups. Among all Services, those who reported being combat deployed and noncombat deployed were significantly more likely to have smoked cigarettes in the past 30 days (41.5% and 39.6%, respectively) and also more

Table 5.2.2

Situational Influences on Tobacco Use, by Service and Type of Tobacco Use

Service/Tobacco Use	Reason			
	When I Get Angry	When Things Are Not Going My Way	When I Need to Be Alert	When I Am Deployed
Army				
Any cigarette use	73.5 (1.4)	70.6 (1.4)	61.6 (1.9)	71.4 (1.9)
Smokeless tobacco use	60.6 (2.3)	59.9 (2.3)	58.8 (2.1)	64.0 (1.6)
Cigar use	61.4 (2.0)	57.9 (1.8)	51.3 (2.1)	61.1 (2.0)
Navy				
Any cigarette use	71.2 (1.3)	67.0 (1.2)	48.4 (1.3)	54.1 (1.6)
Smokeless tobacco use	58.3 (1.8)	57.1 (1.8)	44.7 (2.3)	48.6 (2.0)
Cigar use	44.3 (1.3)	43.4 (1.2)	32.1 (1.4)	37.2 (1.3)
Marine Corps				
Any cigarette use	70.6 (0.8)	68.5 (0.9)	57.8 (1.3)	60.0 (1.5)
Smokeless tobacco use	64.1 (1.6)	63.2 (1.5)	60.7 (1.7)	59.7 (2.1)
Cigar use	51.2 (1.4)	50.0 (1.2)	43.5 (1.5)	46.3 (1.6)
Air Force				
Any cigarette use	68.9 (1.4)	69.1 (1.3)	46.9 (1.4)	58.8 (2.0)
Smokeless tobacco use	50.5 (2.9)	51.4 (2.6)	44.3 (1.9)	53.7 (2.3)
Cigar use	38.4 (2.5)	37.6 (2.5)	27.7 (1.5)	36.3 (1.8)
All Services				
Any cigarette use	72.1 (0.9)	69.7 (0.9)	57.8 (1.2)	66.1 (1.2)
Smokeless tobacco use	59.9 (1.5)	59.4 (1.4)	56.5 (1.4)	60.8 (1.1)
Cigar use	53.6 (1.3)	51.3 (1.2)	43.7 (1.3)	51.4 (1.3)

Note: Table displays the percentage of military personnel by Service and type of tobacco use who indicated that they were “somewhat likely” or “extremely likely” to use tobacco for specified reasons. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of tobacco use and situational influences on tobacco use are given in Section 2.7.4.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Any Cigarette Use, Q52 and Q57; Smokeless Tobacco Use, Q71; Cigar Use, Q80; When I Get Angry, Q69h; When Things Are Not Going My Way, Q69i; When I Need to Be Alert, Q69j; When I Am Deployed, Q69k).

likely to be daily smokers than those not deployed. However, compared with other Services, combat deployed members of the Navy reported lower cigarette use than noncombat deployed and not deployed.² Although the Marine Corps and Army reported higher rates of smokeless tobacco use, combat deployed Navy and Air Force respondents reported statistically higher rates of smokeless use than not deployed personnel (11.1% and 12.9%, respectively).

Higher rates of use by deployed combat personnel in all Services suggest that tobacco products may be used to reduce stress levels associated with combat and to maintain alertness.

5.2.5 References

Bates, M. E., & Labouvie, E. W. (1997). Adolescent risk factors and the prediction of persistent alcohol and drug use into adulthood. *Alcoholism, Clinical and Experimental Research*, 21(5), 944-950.

² It should be noted that, in 1992, the Commander Naval Air Force, U.S. Atlantic Fleet, introduced an extensively revised policy that established a nonsmoking environment with all U.S. Atlantic Fleet facilities. Although smoking was permitted aboard the carriers, it was greatly restricted so as to not compromise the health of nonsmokers. There was also a directive to move to a nonsmoking environment.

Table 5.2.3 **Reasons for Tobacco Use, by Service and Tobacco Use**

Service/Tobacco Use	Reason					
	To Socialize	To Relieve Boredom	To Relieve Stress	To Get a Break from Work	To Avoid Gaining Weight	For Enjoyment
Army						
Any cigarette use	63.9 (1.2)	75.5 (1.1)	90.9 (0.9)	82.9 (1.5)	30.5 (1.6)	82.7 (1.0)
Smokeless tobacco use	52.9 (2.2)	67.5 (1.3)	83.0 (1.4)	68.7 (2.1)	31.5 (1.9)	81.8 (1.6)
Cigar use	59.8 (1.9)	66.8 (1.8)	80.3 (1.4)	73.7 (2.1)	29.4 (1.9)	75.0 (1.7)
Navy						
Any cigarette use	74.1 (1.2)	73.4 (1.1)	88.0 (0.6)	83.8 (0.8)	31.4 (1.3)	81.8 (0.8)
Smokeless tobacco use	59.3 (2.2)	70.7 (1.9)	79.2 (1.5)	70.9 (1.7)	34.2 (2.3)	77.7 (1.7)
Cigar use	58.7 (1.6)	53.4 (1.7)	66.0 (1.4)	60.9 (1.5)	27.1 (1.4)	62.1 (1.5)
Marine Corps						
Any cigarette use	72.6 (1.1)	79.0 (1.0)	90.5 (0.6)	85.7 (0.7)	27.6 (0.8)	84.8 (0.7)
Smokeless tobacco use	64.4 (1.4)	76.8 (1.4)	85.1 (1.1)	75.5 (1.1)	28.1 (1.3)	82.4 (1.1)
Cigar use	61.0 (1.4)	64.3 (1.4)	74.2 (1.3)	68.9 (1.4)	25.0 (0.9)	69.8 (1.2)
Air Force						
Any cigarette use	76.2 (1.6)	72.4 (1.3)	89.6 (0.7)	80.8 (1.3)	31.1 (1.1)	83.9 (1.0)
Smokeless tobacco use	54.4 (2.4)	61.2 (2.2)	79.1 (1.6)	59.4 (1.9)	26.7 (1.9)	81.4 (1.9)
Cigar use	49.3 (2.1)	46.8 (2.3)	57.9 (2.4)	50.4 (2.8)	20.1 (1.4)	57.4 (1.8)
All Services						
Any cigarette use	68.1 (0.8)	75.6 (0.7)	90.4 (0.6)	83.2 (0.9)	30.1 (1.0)	83.2 (0.6)
Smokeless tobacco use	56.0 (1.4)	68.9 (0.9)	82.8 (0.9)	69.1 (1.3)	30.3 (1.2)	81.7 (1.0)
Cigar use	58.1 (1.1)	61.5 (1.2)	73.7 (1.1)	67.4 (1.4)	26.6 (1.1)	69.6 (1.1)

Note: Table displays the percentage of military personnel by Service and type of tobacco use who reported specific reasons for use. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of tobacco use and reasons for tobacco use are given in Section 2.7.4.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Any Cigarette Use Q52 and Q57; Smokeless Use, Q71; Cigar Use, Q80; To Socialize, Q68e; To Relieve Boredom, Q68f; To Relieve Stress, Q68c; To Get a Break from Work, Q68a; To Avoid Gaining Weight, Q68g; For Enjoyment, Q68h).

Table 5.2.4

Tobacco Use, Past 30 Days, by Service and Deployment Status

Service/Deployment Status	Tobacco Measure			
	Any Cigarette Use	Daily Cigarette Use	Smokeless Tobacco Use	Cigar Use
Army				
Combat deployed	46.1 (3.1)	42.1 (2.8)	18.4 (1.5)	33.8 (2.4)
Noncombat deployed	44.6 (3.0)	41.4 (2.6)	20.3 (2.1)	29.8 (2.7)
Not deployed	41.2 (2.0)	37.8 (1.8)	18.4 (1.9)	28.4 (2.2)
Navy				
Combat deployed	29.5 (1.5) ^{5,6}	26.4 (1.5)	11.1 (1.2) ⁶	31.3 (1.4) ⁶
Noncombat deployed	35.0 (2.3) ⁴	30.5 (1.9)	9.0 (1.4)	33.3 (1.9) ⁶
Not deployed	34.4 (1.1) ⁴	29.9 (1.1)	8.6 (0.6) ⁴	27.6 (0.8) ^{4,5}
Marine Corps				
Combat deployed	43.2 (1.6)	37.4 (1.5)	21.7 (1.4)	39.8 (1.5) ⁹
Noncombat deployed	41.7 (1.1)	35.9 (1.1)	21.2 (1.1)	39.1 (1.4) ⁹
Not deployed	40.4 (1.3)	34.6 (1.2)	20.1 (0.9)	33.4 (1.0) ^{7,8}
Air Force				
Combat deployed	28.1 (2.3)	23.3 (2.0)	12.9 (1.2) ¹²	34.0 (1.7) ¹²
Noncombat deployed	26.7 (1.5)	23.4 (1.4)	12.0 (1.1) ¹²	30.2 (1.5) ¹²
Not deployed	27.2 (1.3)	23.8 (1.3)	9.9 (0.8) ^{10,11}	24.7 (1.1) ^{10,11}
All Services				
Combat deployed	41.5 (2.0) ¹⁵	37.1 (1.9) ¹⁵	17.6 (0.9) ¹⁵	34.7 (1.5) ¹⁵
Noncombat deployed	39.6 (1.8) ¹⁵	35.7 (1.6) ¹⁵	17.8 (1.1)	32.1 (1.4) ¹⁵
Not deployed	36.9 (1.1) ^{13,14}	32.9 (1.0) ^{13,14}	15.4 (0.9) ¹³	28.3 (1.0) ^{13,14}

Note: Table displays the percentage of military personnel by Service and deployment status who reported any cigarette use, daily cigarette use, smokeless tobacco use, and cigar use within the past 30 days. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of deployment status and tobacco use are given in Sections 2.7.1 and 2.7.4, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Any Cigarette Use, Q52 and Q57; Daily Cigarette Use, Q52, Q57, and Q62; Smokeless Tobacco Use, Q71; Cigar Use, Q80).

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5.3 Stress and Coping

Stress is a multidimensional phenomenon that can permeate all aspects of life. It involves both psychological and physiological responses, the release of stress hormones, and increased heart and respiratory rates (i.e., the “fight or flight” response). If a stressor is chronic, the continued release of stress hormones can exert a detrimental effect on mental and physical health by creating persistent anxiety, including PTSD and decreased immune system activity (Girdano, Everly, & Dusek, 1990).

Data from the National Epidemiologic Survey on Alcohol and Related Conditions found a consistent positive relation between number of past-year stressors and measures of heavy drinking. Frequency of heavy drinking (i.e., five or more drinks per sitting for men, four or more drinks per sitting for women) increased by 24% with each additional stressor reported by men and by 13% with each additional stressor reported by women. Men showed a stronger association than women between the number of stressors and alcohol use; they also responded more strongly to the presence of any legal and job-related stress. It has been shown that stress does not so much lead persons to drink more often as to substitute larger quantities of alcohol on the days when they do drink (Dawson, Grant, & Ruan, 2005).

According to the Substance Abuse and Mental Health Services Administration (SAMHSA) OAS (2006), tobacco is the second most widely used substance in the United States next to alcohol. Tobacco use includes cigarette smoking, chewing tobacco, and cigar and pipe smoking. Nationally, 29.3% of civilians aged 12 or older were past-month tobacco users in 2004 and 2005.

Although the civilian population and military personnel share many common stressors, the military is more likely to be exposed to and experience different types of stressors, such as deployment, extended separation from friends and family, and fear of death. This section provides information regarding various types of stressors among military personnel and their relationship to alcohol and tobacco use among the active-duty military population. Findings are presented related to the issues of stress, coping style, and exposure to combat experiences.

5.3.1 High Perceived Stress, by Service and Sociodemographic Characteristics

This section presents data comparisons by Service according to several sociodemographic characteristics: gender, race/ethnicity, highest level of education, family status (regarding both marital status and presence or absence of a spouse), and pay grade. As seen in Table 5.3.1, approximately 26.0% of all military personnel reported a score of 20 or higher on a stress scale in the past 6 months. This means that just over one in four persons in the military reported high rates of perceived stress in the past 6 months. The Army showed the highest percentage of personnel reporting high stress, at 30.4%, and the Air Force showed the lowest percentage, at 16.0%. The overall Air Force percentage was significantly lower than the other three Services. Overall and by Service, a greater percentage of males reported high perceived stress than females, although this relation was not tested for significance. Among males, significantly more personnel in the Army and Marine Corps reported high stress than personnel in the Navy and Air Force. Significantly fewer females in the Air Force reported high perceived stress than females in the other three Services. Overall and for each Service except the Marine Corps, a higher proportion of personnel reporting their race/ethnicity as other reported high perceived stress. Interestingly, high perceived stress varied by education level across Services. Within each Service, personnel with some college education in the Army, Navy, and Marine Corps reported higher percentages of high perceived stress than personnel with less than a high school education or college graduates. This trend was not seen in the Air Force. Regardless of

Table 5.3.1

High Perceived Stress, by Service and Sociodemographic Characteristics

Sociodemographic Characteristics	Service				All Services
	Army	Navy	Marine Corps	Air Force	
Gender					
Male	30.4 (1.5) ^{2,4}	22.1 (0.8) ^{1,3,4}	30.4 (0.9) ^{2,4}	15.0 (0.7) ^{1,2,3}	26.6 (1.0)
Female	31.0 (2.3) ⁴	26.6 (1.6) ⁴	31.9 (2.4) ⁴	19.6 (1.2) ^{1,2,3}	27.1 (1.3)
Race/Ethnicity					
White, non-Hispanic	28.8 (1.5) ^{2,4}	21.6 (1.1) ^{1,3,4}	30.0 (1.0) ^{2,4}	14.8 (0.7) ^{1,2,3}	24.9 (1.0)
African American, non-Hispanic	29.8 (2.8) ^{2,4}	22.4 (1.4) ^{1,3,4}	28.2 (2.1) ^{2,4}	18.1 (1.7) ^{1,2,3}	26.7 (1.8)
Hispanic	34.1 (2.4) ^{2,4}	23.8 (1.7) ^{1,3}	33.6 (2.0) ^{2,4}	18.1 (2.4) ^{1,3}	30.4 (1.5)
Other	36.0 (3.2) ^{2,3,4}	26.6 (1.5) ^{1,4}	27.7 (2.7) ^{1,4}	20.4 (2.0) ^{1,2,3}	31.2 (2.2)
Education					
High school or less	30.3 (1.5) ^{2,4}	23.0 (1.2) ^{1,3,4}	31.5 (1.3) ^{2,4}	17.9 (1.1) ^{1,2,3}	28.6 (1.1)
Some college	31.1 (1.9) ^{2,4}	23.2 (1.0) ^{1,3,4}	31.9 (1.4) ^{2,4}	16.7 (0.9) ^{1,2,3}	26.5 (1.2)
College graduate	26.7 (2.5) ^{2,3,4}	18.7 (1.6) ^{1,4}	19.2 (2.6) ^{1,4}	12.4 (1.2) ^{1,2,3}	19.3 (1.3)
Family Status					
Not married	27.6 (1.4) ^{2,4}	20.7 (1.1) ^{1,3,4}	28.3 (0.9) ^{2,4}	15.9 (1.1) ^{1,2,3}	24.7 (0.9)
Married, spouse not present	38.7 (3.7) ⁴	38.3 (2.3) ⁴	36.1 (2.5) ⁴	28.4 (2.0) ^{1,2,3}	36.2 (2.3)
Married, spouse present	31.3 (2.0) ^{2,4}	22.1 (0.9) ^{1,3,4}	33.0 (1.7) ^{2,4}	13.8 (0.9) ^{1,2,3}	26.6 (1.2)
Pay Grade					
E1–E3	30.9 (2.2) ^{2,4}	22.3 (1.3) ^{1,3}	29.7 (1.3) ^{2,4}	18.6 (1.5) ^{1,3}	27.9 (1.3)
E4–E6	32.1 (1.7) ^{2,4}	24.1 (1.0) ^{1,3,4}	33.9 (1.0) ^{2,4}	17.0 (1.1) ^{1,2,3}	28.5 (1.2)
E7–E9	17.8 (3.0)	16.6 (1.7)	14.9 (1.9)	14.9 (1.7)	16.6 (1.6)
W1–W5, O1–O10	25.3 (3.2) ^{2,4}	17.0 (2.3) ^{1,4}	19.5 (3.0) ⁴	10.1 (1.3) ^{1,2,3}	17.6 (1.6)
Total	30.4 (1.3) ^{2,4}	22.7 (0.9) ^{1,3,4}	28.3 (0.7) ^{2,4}	16.0 (0.7) ^{1,2,3}	26.4 (0.8)

Note: Table displays the percentage of military personnel by Service and sociodemographic characteristics who reported high stress in the past 6 months. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of sociodemographic characteristics and stress level are given in Sections 2.7.1 and 2.7.5, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Stress, Q46).

Service, personnel who were married with their spouse not present reported higher levels of perceived stress than personnel who were not married or personnel who were married with their spouse present. Except for the Air Force, personnel in pay grades E4 through E6 reported the highest levels of high perceived stress compared with other pay grades.

5.3.2 *Stress and Use of Alcohol and Tobacco*

In a recent large-scale study of drinking behaviors among Navy career-enlisted personnel and officers, Ames et al. (2007) examined factors such as enforcement of alcohol policy, work problems, work-related stress, and length of deployment on positive normative beliefs about heavy drinking during deployment liberty. When comparing heavy frequent drinking and heavy episodic drinking during deployment liberty, it was found that the factors listed above were positively related to frequent heavy drinking and heavy episodic drinking during personnel's most recent deployment liberty. The rates of alcohol abuse differed between men and women, as did the occurrence of heavy drinking episodes. Despite these gender differences, there was no difference in the frequency of heavy episodic drinking during Navy personnel's last deployment liberty.

According to a recent study of two cohorts of Air Force personnel conducted in 1995–1996 and 1999–2000, tobacco use among Air Force recruits was on the rise (Haddock et al., 2007). Cigarette use significantly increased among both men and women between the two cohorts, while smoking decreased in the general population during the same period. The increase in smoking among recruits remained statistically significant even when demographic differences were taken into account. The recruits from the second Air Force cohort reported being less motivated to quit than were those surveyed earlier.

This section illustrates relations between high perceived stress and alcohol and tobacco use, as well as reasons influencing use. Selected reasons influencing alcohol use included to relax, to relieve stress, and to forget about problems, among others. Reasons influencing tobacco

use included to relieve stress, when anxious or stressed, and when the respondent needed to get through a difficult day.

An estimated 34.4% of all personnel who reported high perceived stress indicated heavy alcohol use. The Marine Corps reported the highest percentage engaging in heavy alcohol use (48.2%), whereas the Air Force reported the lowest (24.2%). Among reasons influencing alcohol use, shown in Table 5.3.2, to relax was the most commonly reported; across Services, more than three out of four personnel (77.8%) indicated that they used alcohol to relax. The least endorsed reason among personnel reporting high perceived stress was to forget about problems (44.6%).

Nearly half of personnel in all Services (46.4%) with perceived high stress reported current cigarette use, and nearly one in five (18.7%) reported current smokeless tobacco use. The Army had the highest percentage of respondents who reported cigarette smoking, while the Air Force had the lowest. For smokeless tobacco use, however, the Marine Corps was highest- 1 in 4 respondents (25.5%) reported current smokeless use. Nearly two-thirds of personnel in all Services (63.6%) indicated that they used tobacco products to relieve stress; 42.1% cited needing to get through a difficult day as an influence on their tobacco use. For all three reasons shown in Table 5.3.2, the Army reported the highest rates of endorsement among personnel with high perceived stress.

5.3.3 *Coping Style and Its Effect on Alcohol and Tobacco Use*

It is generally accepted that people cope differently with stress. Some employ stress-coping behaviors, such as overuse of alcohol and/or tobacco, which increase the risk of developing further mental and physical health problems. According to researchers, alcohol and tobacco abuse and dependence frequently co-occur (e.g., Jackson et al., 2003). On the other hand, positive coping behaviors such as exercise, talking through problems with friends or counselors, or praying can aid in preventing stress-related illnesses. This section details the kinds of environmental and life situations that are

Table 5.3.2

Alcohol and Tobacco Use and Influences among Personnel with High Stress, Past 6 Months, by Service and Selected Characteristics

Selected Characteristics	Service				All Services
	Army	Navy	Marine Corps	Air Force	
Reasons Influencing Alcohol Use					
To relax	77.0 (2.1) ³	76.1 (1.4) ³	85.0 (1.2) ^{1,2,4}	71.5 (2.2) ³	77.8 (1.3)
To relieve stress	67.4 (2.5) ³	66.5 (1.5) ³	75.7 (1.3) ^{1,2,4}	62.1 (2.3) ³	68.3 (1.5)
To forget about problems	43.9 (2.3) ^{3,4}	41.7 (1.4) ^{3,4}	54.8 (1.5) ^{1,2,4}	34.3 (2.1) ^{1,2,3}	44.6 (1.4)
Reasons Influencing Tobacco Use					
To relieve stress	65.9 (2.2) ^{2,4}	57.7 (1.8) ^{1,3,4}	67.5 (1.2) ^{2,4}	50.5 (2.2) ^{1,2,3}	63.6 (1.3)
When anxious or stressed	49.0 (2.2) ^{2,4}	39.9 (1.6) ^{1,3,4}	46.8 (1.4) ^{2,4}	34.5 (2.0) ^{1,2,3}	46.1 (1.4)
When need to get through a difficult day	45.1 (2.3) ^{2,4}	35.2 (1.5) ^{1,3}	41.8 (1.4) ^{2,4}	31.8 (2.2) ^{1,3}	42.1 (1.4)
Heavy Alcohol Use	32.8 (1.7) ^{3,4}	29.1 (1.5) ³	48.2 (1.7) ^{1,2,4}	24.2 (2.3) ^{1,3}	34.4 (1.1)
Tobacco Use					
Cigarette use	49.2 (2.5) ^{2,4}	39.4 (1.8) ^{1,3,4}	48.7 (1.1) ^{2,4}	33.1 (2.1) ^{1,2,3}	46.4 (1.6)
Smokeless tobacco use	19.3 (2.0) ^{2,3,4}	11.1 (1.1) ^{1,3}	25.5 (1.2) ^{1,2,4}	10.5 (1.2) ^{1,3}	18.7 (1.3)

Note: Table displays the percentage of military personnel by Service and selected characteristics who reported high stress in the past 6 months. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of stress levels and influences on alcohol and tobacco use are given in Section 2.7.5.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Heavy Alcohol Use, Q24–Q35; Reasons Influencing Alcohol Use, Q41b, Q41g, and Q41i; Stress, Q46; Any Cigarette Use, Q52 and Q57; Reasons Influencing Tobacco Use, Q68c, Q69e, and Q69g; Smokeless Tobacco Use, Q71).

perceived as stressful by military personnel, by sociodemographic characteristics and branch of Service. Furthermore, specific tables illustrate the types of stressor responses, including alcohol and tobacco use, that military personnel use to cope with stressors. Finally, data are presented that look specifically at alcohol and tobacco use among military personnel with high combat exposure.

Table 5.3.3 presents information on predominant coping styles (i.e., responses to stressors, anxiety, feeling pressured) across Services and by sociodemographic characteristics. Coping styles are defined as positive or negative based on specific behaviors used to deal with stress. Positive coping behaviors include talking to a friend or relative, praying, engaging in a hobby, getting something to eat, and engaging in exercise or sports. Negative coping behaviors include drinking alcohol, smoking cigarettes, using illicit drugs, and thinking about hurting or killing oneself. As can be expected, percentages of personnel indicating a positive coping style were much greater than those endorsing negative coping behaviors across all sociodemographic groups and Services. Women in the Navy (77.7%) and Marine Corps (71.2%) had statistically higher rates of positive coping behaviors than did their male counterparts. Men in the Air Force reported the highest positive coping rate (68.2%), followed by the Navy, Marine Corps, and Army. Reported positive coping rates for these three Services ranged from 64.8% to 54.6%.

When examining coping style by race/ethnicity, African Americans in the Air Force reported the highest rates of positive coping (79.7%), followed by African American personnel in the Navy, Army, and Marine Corps. Whites, Hispanics, and other racial and ethnic groups reported rates of positive coping between approximately 50.0% and 68.0%. Having a college education was associated with significantly higher rates of coping across all four branches (ranging from 75.0% to 82.4%). Personnel with some college reported significantly higher rates of positive coping than those with a high school education. Rates of positive coping for those with some college ranged from 61.2% for Army personnel to 69.7% for those in the Navy. For military personnel with

a high school education, positive coping strategies ranged from 47.2% (Army) to 62.6% (Air Force).

Generally speaking, military personnel in all branches reported significantly more positive coping when their spouses were present (range, 58.7% to 72.3%). Personnel in each military branch who were not married or married without their spouses present also reported high levels of positive coping, with those who were married having more positive coping strategies than those who were not married. As can be seen in Table 5.3.3, the percentages of military personnel who endorsed positive coping strategies increased as pay grade increased in all branches of the military. Pay grades W1 through W5 and O1 through O10 reported percentages of positive coping ranging from 76.6% in the Army to 86.1% in the Navy. The lowest percentage of positive coping strategies reported was in the Army, with E1 through E3 personnel reporting positive coping behaviors at 49.3%. In summary, the following groups reported the significantly highest percentages of coping behaviors across Service branches: women, African Americans, college graduates, married personnel with spouses present, and warrant officers/officers.

Research indicates that the number of deployments and the length of deployment have a strong impact on levels of stress and mental health issues (Adler et al., 2005). Because the central mission of the Service branches varies, it is important to look at each Service branch individually. For example, the Army and the Marine Corps have a larger proportion of ground-based combat units (e.g., infantry, artillery, and armor) in comparison with the Navy and Air Force. This higher proportion of ground-based combat units translates to a larger percentage of Soldiers and Marines with multiple and longer-length deployments, as well as a stronger likelihood of deployments to active combat theaters. According to the Department of Defense, from 2001 to 2004, 55.9% of Soldiers and 56.2% of Marines were deployed to Iraq or Afghanistan, compared with 47.2% of Sailors and 39.8% of Airmen (Adler et al., 2005).

Table 5.3.4 displays the percentages of military personnel by Service who reported frequently using specified positive and negative coping behaviors;

Table 5.3.3

Predominant Coping Style, by Service and Sociodemographic Characteristics

Sociodemographic Characteristics	Service/Coping Style								All Services	
	Army		Navy		Marine Corps		Air Force			
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
Gender										
Male	54.6 (1.4) ²	21.5 (1.0) ²	64.8 (0.9) ²	12.8 (0.5) ²	56.7 (1.1)	19.9 (1.1)	68.2 (1.0) ²	8.6 (0.6)	58.5 (0.9) ²	17.9 (0.7) ²
Female	72.0 (2.5) ¹	13.3 (1.8) ¹	77.7 (1.6) ¹	10.1 (1.3) ¹	71.2 (1.8)	15.4 (1.6)	81.0 (1.4) ¹	8.7 (1.0)	75.3 (1.3) ¹	11.7 (1.0) ¹
Race/Ethnicity										
White, non-Hispanic	51.6 (1.5) ^{4,5}	25.6 (1.5) ^{4,5,6}	63.5 (1.2) ^{4,5,6}	14.8 (0.8) ^{4,5}	56.0 (1.2)	23.6 (1.3)	68.9 (1.4) ⁴	9.5 (0.8) ⁴	57.4 (1.0) ^{4,5}	20.5 (0.9) ^{4,5,6}
African American, non-Hispanic	70.3 (2.1) ^{3,5,6}	10.9 (1.6) ^{3,6}	72.2 (1.6) ^{3,5}	6.8 (0.9) ^{3,5,6}	66.4 (1.9)	8.7 (1.7)	79.7 (1.4) ^{3,5,6}	4.8 (0.8) ^{3,6}	71.9 (1.3) ^{3,5,6}	9.2 (1.0) ^{3,5,6}
Hispanic	59.4 (2.3) ^{3,4}	16.0 (1.7) ³	67.4 (1.8) ^{3,4}	10.3 (0.9) ^{3,4}	58.6 (2.2)	14.5 (1.4)	71.2 (2.0) ⁴	7.6 (1.1)	61.8 (1.4) ^{3,4}	13.9 (1.0) ^{3,4}
Other	52.6 (3.6) ⁴	17.3 (2.3) ^{3,4}	71.3 (1.7) ³	12.4 (1.2) ⁴	62.5 (3.2)	15.5 (2.2)	68.8 (2.7) ⁴	10.0 (1.7) ⁴	59.1 (2.2) ⁴	15.1 (1.4) ^{3,4}
Education										
High school or less	47.2 (1.6) ^{8,9}	26.3 (1.2) ^{8,9}	59.3 (1.1) ^{8,9}	15.6 (0.8) ^{8,9}	53.4 (1.4)	22.7 (1.2)	62.6 (1.7) ^{8,9}	13.1 (1.2) ^{8,9}	50.8 (1.2) ^{8,9}	23.5 (0.9) ^{8,9}
Some college	63.7 (1.8) ^{7,9}	16.6 (1.6) ^{7,9}	69.7 (1.0) ^{7,9}	11.4 (0.7) ^{7,9}	61.2 (1.3)	17.5 (1.2)	68.9 (1.2) ^{7,9}	9.8 (0.6) ^{7,9}	65.5 (1.0) ^{7,9}	14.3 (0.8) ^{7,9}
College graduate	75.0 (2.8) ^{7,8}	5.9 (1.6) ^{7,8}	79.8 (1.9) ^{7,8}	4.5 (0.9) ^{7,8}	78.4 (2.3)	3.3 (1.0)	82.4 (1.1) ^{7,8}	1.6 (0.4) ^{7,8}	78.8 (1.2) ^{7,8}	3.8 (0.7) ^{7,8}
Family Status										
Not married	54.5 (1.9) ¹²	23.1 (1.3) ¹²	64.9 (1.1) ¹²	13.9 (0.7) ¹²	56.5 (1.4)	22.2 (1.2)	68.8 (1.3) ¹²	10.7 (0.8) ¹²	58.7 (1.1) ¹²	19.6 (0.8) ¹²
Married, spouse not present	56.5 (3.6)	21.5 (2.4)	65.0 (2.8)	14.8 (1.6) ¹²	50.4 (3.4)	15.7 (2.3)	70.0 (2.2)	10.0 (1.0) ¹²	59.6 (2.2)	17.9 (1.5) ¹²
Married, spouse present	58.7 (1.6) ¹⁰	17.8 (1.2) ¹⁰	69.4 (1.1) ¹⁰	9.9 (0.7) ^{10,11}	62.4 (1.5)	15.3 (1.4)	72.3 (1.2) ¹⁰	6.7 (0.7) ^{10,11}	63.1 (1.0) ¹⁰	14.3 (0.7) ^{10,11}
Pay Grade										
E1–E3	49.3 (1.8) ^{14,15,16}	27.7 (1.4) ^{14,15,16}	61.9 (1.6) ^{14,15,16}	16.3 (1.2) ^{14,15,16}	55.8 (1.8)	22.9 (1.3)	68.2 (2.2) ^{15,16}	12.3 (1.2) ^{15,16}	54.9 (1.1) ^{14,15,16}	23.2 (0.9) ^{14,15,16}
E4–E6	55.9 (1.6) ^{13,15,16}	21.1 (1.2) ^{13,15,16}	65.8 (1.1) ^{13,15,16}	12.3 (0.7) ^{13,15,16}	55.5 (1.3)	20.1 (1.1)	67.3 (1.0) ^{15,16}	10.4 (0.6) ^{15,16}	59.1 (1.0) ^{13,15,16}	18.0 (0.7) ^{13,15,16}
E7–E9	68.1 (2.4) ^{13,14,16}	8.1 (1.5) ^{13,14,16}	75.8 (1.6) ^{13,14,16}	6.6 (0.9) ^{13,14,16}	72.8 (3.6)	4.5 (2.0)	74.6 (1.5) ^{13,14,16}	5.0 (0.9) ^{13,14,16}	71.2 (1.4) ^{13,14,16}	6.8 (0.9) ^{13,14,16}
W1–W5, O1–O10	76.6 (3.0) ^{13,14,15}	2.6 (1.2) ^{13,14,15}	86.1 (2.0) ^{13,14,15}	3.1 (1.1) ^{13,14,15}	82.2 (2.0)	1.8 (0.7)	82.8 (1.5) ^{13,14,15}	0.9 (0.3) ^{13,14,15}	80.5 (1.4) ^{13,14,15}	1.8 (0.5) ^{13,14,15}
Total	56.6 (1.5)	20.5 (1.1)	66.9 (0.9)	12.3 (0.5)	58.5 (0.8)	19.2 (0.7)	70.7 (0.9)	8.7 (0.6)	60.7 (0.9)	17.1 (0.6)

Note: Table displays the percentage of military personnel by Service and sociodemographic characteristics who reported a predominantly positive or negative coping style when they feel pressured, stressed, or anxious. Personnel who reported equally positive and negative coping styles are excluded. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of sociodemographic characteristics and coping style are given in Sections 2.7.1 and 2.7.5, respectively.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Coping Style, Q47).

Table 5.3.4 Coping Style, by Service

Coping Style	Service				All Services
	Army	Navy	Marine Corps	Air Force	
Positive Coping					
Talk to friends/family	36.1 (0.9) ^{2,3,4}	41.4 (0.8) ^{1,3,4}	39.3 (0.7) ^{1,2,4}	45.3 (1.0) ^{1,2,3}	39.0 (0.5)
Say a prayer	19.1 (1.4) ⁴	22.2 (0.8) ³	17.2 (0.5) ^{2,4}	24.0 (0.7) ^{1,3}	20.0 (0.8)
Exercise/play sports	18.6 (0.8) ^{2,3,4}	25.2 (0.7) ^{1,4}	24.1 (0.5) ^{1,4}	22.0 (0.7) ^{1,2,3}	20.9 (0.5)
Engage in a hobby	21.9 (0.9) ^{2,3,4}	26.7 (0.7) ^{1,3,4}	24.2 (0.5) ^{1,2}	24.5 (0.9) ^{1,2}	23.3 (0.5)
Get something to eat	14.4 (0.8)	15.1 (0.6) ⁴	15.3 (0.5) ⁴	12.8 (0.6) ^{2,3}	14.3 (0.5)
Think of a plan to solve problem	42.6 (1.6) ⁴	45.8 (0.7) ³	40.0 (0.8) ^{2,4}	46.9 (0.9) ^{1,3}	43.3 (0.9)
Negative Coping					
Smoke a cigarette	27.1 (1.2) ^{2,4}	18.1 (0.7) ^{1,3,4}	24.3 (0.9) ^{2,4}	13.5 (1.0) ^{1,2,3}	23.1 (0.7)
Have a drink	11.1 (0.8) ^{2,3,4}	8.1 (0.4) ^{1,3,4}	15.2 (0.6) ^{1,2,4}	5.1 (0.4) ^{1,2,3}	10.4 (0.5)
Use drugs	1.7 (0.3) ⁴	1.1 (0.2) ^{3,4}	1.7 (0.2) ^{2,4}	0.3 (0.1) ^{1,2,3}	1.3 (0.2)
Think about hurting/killing myself	1.9 (0.3) ⁴	1.5 (0.2) ^{3,4}	2.2 (0.2) ^{2,4}	0.4 (0.1) ^{1,2,3}	1.6 (0.2)

Note: Table displays the percentage of military personnel by Service who reported that they frequently engage in different types of activities for coping with stress. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of coping style are given in Section 2.7.5.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Coping Style, Q47).

behaviors were classified as positive or negative by factor analysis. Among positive coping behaviors, thinking of a plan to solve the problem was the most frequently endorsed behavior reported by each military branch (range, 42.6% to 46.9% for the Army and Air Force, respectively), while talking to friends or family was the second highest positive behavior reported across Services branches (range, 36.1% to 45.3% for the Army and Air Force, respectively). Each branch reported different levels of the remaining positive coping behaviors: saying a prayer, exercising or playing sports, engaging in a hobby, or eating. The most common negative coping behavior reported across all military branches was smoking a cigarette, with Army personnel reporting a percentage of 27.1. Having a drink, using drugs, and thinking about hurting or killing oneself were reported in decreasing and much lower percentages than smoking across the Services. In summary, all branches of the military reported significantly higher rates of positive coping behaviors.

5.3.4 *Stress, Combat Exposure, and Use of Alcohol and Tobacco*

Exposure to traumatic events constitutes a particularly powerful source of stress. During deployment to a hostile region, military personnel may experience events including incoming mortar fire, responsibility for the death or serious injury of an enemy, casualties within one's unit, being wounded, working with enemy prisoners of war, and exposure to dead bodies or human remains, to name a few. These events are largely specific to military personnel and civilian first responders. This section presents data regarding the relation between high combat exposure, stress level, and alcohol and tobacco use.

Table 5.3.5 displays the percentage of military personnel who reported high combat exposure, by Service and selected alcohol and tobacco use characteristics. Among personnel reporting high combat exposure, an estimated 32.2% indicated heavy alcohol use; Marine Corps personnel with high combat exposure reported the highest percentage (46.5%). This estimate was nearly twice the percentage of Air Force personnel reporting high combat exposure who were heavy alcohol users

(26.0%). Of the reasons influencing alcohol use among those with high combat exposure, to relax was indicated most commonly (73.3% across all Services). Significantly more Marine Corps respondents with high combat exposure indicated that they used alcohol to relax (82.1%) than Army (71.9%), Navy (74.4%), and Air Force (69.4%) respondents.

Nearly half of all personnel reporting high combat exposure indicated that they were current cigarette users (44.6%); one in five (20.0%) reported using smokeless tobacco. The Air Force had significantly fewer current smokers than the Army and Marine Corps. With the exception of the Marine Corps, rates of smokeless tobacco use among respondents with high combat exposure were similar. More than half of personnel across Services who indicated high combat exposure reported that they used tobacco to relieve stress (59.9%). Nearly half said that they used tobacco when they were anxious or stressed (44.5%).

Table 5.3.6 displays the percentage of military personnel by Service in self-reported low, moderate, or high combat exposure groups who reported low, moderate, or high stress levels. The Army had the highest percentage of respondents indicating a high level of stress (30.4%), while the Air Force had the lowest (16.0%). Similarly, the Air Force reported the highest percentage of personnel with low stress (50.3%).

Among personnel reporting a high level of combat exposure, nearly 35% reported high levels of stress; this difference was significantly different from rates of high stress among persons with low or moderate combat exposure. The Marine Corps and Navy reported the highest percentage of personnel with high combat exposure and stress (38.7% and 37.4%, respectively). Persons reporting a high level of combat exposure were consistently more likely to indicate high overall stress levels than those reporting a low level of combat exposure; this was the case both for individual Services and for all Services combined. Although these data do not imply causality, a clear positive relation between combat exposure and overall stress level can be seen.

Table 5.3.5 Alcohol and Tobacco Use and Influences on Use among Personnel with High Combat Exposure, by Service

Selected Characteristics	Service				All Services
	Army	Navy	Marine Corps	Air Force	
Reasons Influencing Alcohol Use					
To relax	71.9 (1.8) ³	74.4 (1.9) ³	82.1 (1.2) ^{1,2,4}	69.4 (2.4) ³	73.3 (1.4)
To relieve stress	57.5 (1.7) ³	60.9 (2.5) ³	67.8 (1.3) ^{1,2,4}	55.8 (3.1) ³	58.9 (1.4)
To forget about problems	28.3 (1.5) ^{3,4}	32.7 (2.7) ^{3,4}	41.3 (1.8) ^{1,2,4}	18.9 (2.1) ^{1,2,3}	29.7 (1.2)
Reasons Influencing Tobacco Use					
To relieve stress	60.3 (1.5) ⁴	53.8 (3.5) ³	63.5 (1.4) ^{2,4}	47.7 (2.5) ^{1,3}	59.9 (1.2)
When anxious or stressed	45.7 (1.5) ^{2,4}	36.6 (2.4) ^{1,3}	42.5 (1.5) ^{2,4}	34.6 (2.8) ^{1,3}	44.5 (1.2)
When need to get through a difficult day	39.2 (1.5) ^{2,4}	31.3 (2.3) ^{1,3}	38.1 (1.7) ^{2,4}	28.6 (2.2) ^{1,3}	38.3 (1.2)
Heavy Alcohol Use	30.1 (2.0) ³	31.3 (2.4) ³	46.5 (2.0) ^{1,2,4}	26.0 (2.0) ³	32.2 (1.6)
Tobacco Use					
Cigarette use	45.4 (1.9) ⁴	39.7 (3.0) ³	45.9 (1.7) ^{2,4}	31.3 (3.1) ^{1,3}	44.6 (1.5)
Smokeless tobacco use	19.3 (1.6) ³	18.1 (2.5) ³	25.9 (1.3) ^{1,2,4}	15.8 (2.7) ³	20.0 (1.3)

Note: Table displays the percentage of military personnel with high combat exposure by Service and selected characteristics who reported high stress in the past 6 months. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of combat exposure and influences on alcohol and tobacco use are given in Section 2.7.5.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Heavy Alcohol Use, Q24–Q35; Reasons Influencing Alcohol Use, Q41b, Q41g, and Q41i; Any Cigarette Use, Q52 and Q57; Reasons Influencing Tobacco Use, Q68c, Q69e, and Q69g; Smokeless Tobacco Use, Q71; Combat Exposure, Q86).

Table 5.3.6 Stress Level, by Service and Combat Exposure

Service/Stress Level	Combat Exposure			Total
	Low	Moderate	High	
Army				
Low stress	43.9 (3.8) ^{2,3}	34.0 (3.4) ¹	28.8 (1.7) ¹	34.6 (1.3)
Moderate stress	33.1 (2.6)	34.4 (2.9)	36.7 (1.6)	35.0 (1.1)
High stress	23.0 (2.4) ^{2,3}	31.6 (3.4) ¹	34.6 (2.1) ¹	30.4 (1.3)
Navy				
Low stress	47.4 (1.2) ^{2,3}	31.6 (1.9) ¹	32.2 (2.5) ¹	43.8 (0.9)
Moderate stress	34.2 (1.3) ²	40.2 (1.9) ^{1,3}	30.4 (2.6) ²	33.5 (0.8)
High stress	18.4 (1.2) ^{2,3}	28.1 (2.0) ^{1,3}	37.4 (2.8) ^{1,2}	22.7 (0.9)
Marine Corps				
Low stress	43.8 (1.3) ^{2,3}	37.2 (2.6) ^{1,3}	27.1 (1.5) ^{1,2}	37.9 (0.8)
Moderate stress	31.7 (1.8)	36.9 (1.8)	34.2 (1.2)	33.8 (0.6)
High stress	24.5 (1.3) ³	25.8 (1.7) ³	38.7 (1.4) ^{1,2}	28.3 (0.7)
Air Force				
Low stress	53.3 (1.8) ^{2,3}	45.9 (2.2) ^{1,3}	33.4 (2.4) ^{1,2}	50.3 (1.1)
Moderate stress	33.3 (1.6) ³	38.1 (2.4)	40.8 (2.7) ¹	33.7 (0.8)
High stress	13.4 (0.7) ³	16.1 (1.4) ³	25.8 (1.9) ^{1,2}	16.0 (0.7)
All Services				
Low stress	48.5 (1.2) ^{2,3}	37.2 (1.8) ^{1,3}	28.9 (1.4) ^{1,2}	39.2 (0.8)
Moderate stress	33.2 (1.0)	36.2 (1.8)	36.4 (1.2)	34.4 (0.6)
High stress	18.2 (0.7) ^{2,3}	26.7 (2.1) ^{1,3}	34.7 (1.6) ^{1,2}	26.4 (0.8)

Note: Table displays the percentage of military personnel by Service and combat exposure level who reported the specified stress levels. The standard error of each estimate is presented in parentheses. Significance indicators identify columns that are significantly different at the 95% confidence level. Definitions of combat exposure and stress levels are given in Section 2.7.5.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Stress Level, Q46; Combat Exposure, Q86).

5.3.5 References

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5.4 *Culture of Alcohol and Tobacco Use*

Drinking culture can be defined as the customs shared by groups of people involved in drinking alcoholic beverages. Although there are many types of groups who have well-known drinking cultures (e.g., Greek letter organizations, college athletes), on the most individual level, males and females have their own drinking culture. On a physical level, research indicates that gender differences in the quantities of alcohol consumed are partially explained by differences in body composition between males and females, resulting in different rates of alcohol metabolism (Li et al., 1998). Gender differences are also seen in intentions to drink. While comparing planned and actual drinking, research has found that men tend to binge drink more often than originally intended, while females binge drank less often than they had planned (Maggs, 1997). Males are more likely than females to report more social pressure to drink and a greater embarrassment about expressing drinking-related concerns, whereas females expected more severe outcomes than males if they drank excessively (Suls & Green, 2003). Research also indicates that males who express concerns about drinking have a harder time fitting in with their peers than females (Suls & Green, 2003).

5.4.1 *Administrative/Policy Influences on Alcohol Use, by Service and Gender*

The military has strict alcohol regulations to which all Service personnel must adhere. Common ways to enforce these regulations, especially among underage military personnel, is to regularly patrol the barracks/dormitories. Due to the fact that, as of 2003, underage drinkers accounted for almost 20% of all alcohol consumed in the United States and there was more than \$22 billion in alcohol expenditures, it may be particularly useful for the military to focus on underage drinking among their personnel (Foster et al., 2003). Recent research demonstrated that one of the best ways to reduce alcohol consumption among first-year college students was to enforce the minimum drinking age law and establish clear sanctions against alcohol use (Wagenaar & Toomey, 2002; Wechsler et al., 2004). As stated above, the majority of drinking for this study

occurred in barracks/dormitories, so enforcement of alcohol policy at those locations may be effective in reducing negative alcohol outcomes.

Table 5.4.1 displays three administrative and policy influences affecting alcohol use. Personnel were asked about the policy regarding the amount of alcohol permitted in their barracks or dormitories. Analyses were restricted to personnel living in the barracks/dormitories. Among all personnel, 63.0% reported that a six pack of beer was allowed, 45.6% reported that a case of beer or bottle of liquor was allowed, and 23.9% reported that there was no limit on alcohol allowed in one's room. Males and females in the Marine Corps were the most likely to report that a six pack of beer was allowed in their barracks (85.3% and 79.8%, respectively), but they were the least likely to report that a case of beer or bottle of liquor was permitted in their barracks (21.5% overall) and that there was no limit on alcohol (3.6% overall). The Air Force was the only Service branch that showed significant gender differences between the three alcohol policy influences, with males reporting significantly higher rates than females.

Personnel were also asked how strictly the policy on alcohol was enforced in the barracks. Among all personnel, about one in four said that the policy was not enforced and 27.3% reported that there were routine inspections or room checks. The Army and Air Force (27.2% and 33.0%, respectively) reported the highest percentages of the policy not being enforced, with the Marine Corps (10.3%) reporting the lowest percentage, suggesting that the Marine Corps may be more diligent in policing bachelor housing. Males in the Air Force were significantly more likely than females in the Air Force to report that the alcohol policy was not enforced in the barracks.

Among a list of reasons for limiting alcohol use, two were associated with administrative and policy influences: fear of military consequences and fear of command influences. This analysis was conducted among all personnel and was not limited to those only living in the barracks (unlike the other variables in this table). Almost 6% of all personnel reported limiting their drinking because of command influences, whereas

Table 5.4.1

Administrative/Policy Influences on Alcohol Use, by Service and Gender

Service/Gender	Amount of Alcohol Permitted in Barracks ^a			Alcohol Policy Enforcement in Barracks ^a				Limiting Influences	
	Six Pack of Beer	Case of Beer/Bottle of Liquor	No Limit on Alcohol	Routine/Regular Inspection	Not Enforced	Fear of Military Consequences	Command Influences		
Army									
Male	60.9 (2.5)	50.0 (2.3)	19.9 (2.7)	23.1 (2.3)	26.4 (2.7)	15.0 (0.8)	5.3 (0.6)		
Female	60.9 (5.4)	48.0 (4.8)	17.2 (4.0)	+ (+)	35.3 (8.1)	16.0 (1.7)	7.5 (1.4)		
Total	60.9 (2.5)	49.8 (2.0)	19.6 (2.6)	23.3 (2.6)	27.2 (2.8)	15.1 (0.7)	5.6 (0.5)		
Navy									
Male	48.2 (3.8)	46.7 (4.6)	43.1 (4.3)	40.8 (3.6)	27.4 (3.1)	21.3 (0.6)	8.9 (0.4)		
Female	44.0 (3.7)	42.7 (5.3)	42.0 (5.2)	37.3 (4.7)	31.7 (4.0)	20.8 (1.2)	8.1 (0.8)		
Total	47.6 (3.6)	46.3 (4.5)	43.0 (4.2)	40.1 (3.7)	27.9 (3.0)	21.2 (0.6)	8.7 (0.4)		
Marine Corps									
Male	85.3 (2.2)	22.2 (1.4) ⁸	3.8 (0.6)	35.5 (2.2)	10.2 (1.2)	16.0 (1.0) ⁸	5.8 (0.4) ⁸		
Female	79.8 (4.3)	14.5 (2.5) ⁷	1.8 (1.1)	40.3 (4.8)	10.7 (2.5)	21.0 (2.2) ⁷	9.7 (2.0) ⁷		
Total	84.8 (2.1)	21.5 (1.4)	3.6 (0.5)	35.9 (2.2)	10.3 (1.2)	15.9 (0.6)	6.1 (0.3)		
Air Force									
Male	54.8 (2.1) ¹¹	62.6 (2.3) ¹¹	60.0 (2.3) ¹¹	23.8 (1.9)	35.0 (2.4) ¹¹	16.1 (0.7)	4.3 (0.4)		
Female	38.7 (3.8) ¹⁰	50.8 (3.3) ¹⁰	47.4 (3.1) ¹⁰	26.2 (3.5)	25.0 (3.1) ¹⁰	14.2 (1.1)	3.9 (0.7)		
Total	51.4 (2.1)	60.1 (2.2)	57.5 (2.0)	24.6 (1.6)	33.0 (2.3)	15.8 (0.6)	4.3 (0.3)		
All Services									
Male	63.9 (1.7) ¹⁴	45.9 (1.6)	23.7 (1.8)	27.0 (1.5)	24.5 (1.7)	16.0 (0.5)	5.5 (0.4)		
Female	56.0 (3.2) ¹³	43.1 (2.8)	25.6 (2.4)	29.5 (3.9)	28.4 (3.6)	16.6 (0.9)	6.7 (0.7)		
Total	63.0 (1.6)	45.6 (1.4)	23.9 (1.7)	27.3 (1.6)	25.0 (1.7)	16.0 (0.4)	5.7 (0.3)		

Note: Table displays the percentage of military personnel by Service and gender reporting amount of alcohol permitted in the barracks, alcohol policy enforcement in the barracks, and installation influences that limit alcohol consumption. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of administrative/policy influences on alcohol use are given in Section 2.7.6.

^aLimited to personnel living in barracks/dormitory.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Amount of Alcohol Permitted in Barracks, Q17; Alcohol Policy Enforcement in Barracks, Q13 and Q18; Military Consequences Limit Drinking, Q40d; Command Influences Limit Drinking, Q40i).

16.0% reported limiting their drinking out of fear of military consequences. The Navy reported the highest percentages of limiting their drinking because of fear of military consequences and command influences (21.2% and 8.7%, respectively). Females in the Marine Corps were significantly more likely than males in the Marine Corps to endorse those two reasons for limiting their drinking.

5.4.2 *Culture of Drinking, by Service and Gender*

As seen in Table 5.4.2, the percentages shown are of military personnel in each Service and gender who indicated that they agreed or strongly agreed with the statements about acceptability of consuming alcohol. The drinking norm most strongly agreed with was that drinking was part of being in the military (35.7%), with males (36.0%) providing stronger agreement than females (32.1%); the norm least often agreed with was that drinking was the only recreation available at the installation (14.3%).

Overall, males agreed with most norms regarding drinking to a greater extent than females, although this relation was not significantly different for all the Services. Females in the Navy were significantly more likely than males in the Navy to report that it was hard to fit in if they did not drink and that drinking was the only recreation available. Males in the Air Force were significantly more likely than females in the Air Force to report that it was hard to fit in if they did not drink, that drinking was part of being at the installation, and that they were encouraged to drink at social functions.

5.4.3 *Location of Drinking on Base, by Service and Gender*

Military installations have historically been known to have an above average number of bars, alcohol stores,

and tobacco outlets outside their gates. In a study on availability of alcohol, Navy personnel reported they found alcohol and opportunities to drink overwhelmingly available in both on-base and off-base settings, and from friends both in and out of the Navy (Moore et al., 2007). Research on the availability of alcohol indicates that a high density of alcohol outlets and ample access to low-cost alcohol is associated with heavy drinking in undergraduate students (Kuo et al., 2003; Weitzman et al., 2003). It also has been shown that heavy drinkers are more likely to report that it is easy for them to obtain alcohol (Wechsler et al., 2000). At least among adolescents, higher levels of advertising, lower cigarette prices, and greater availability of cigarette promotions have been associated with smoking initiation (Slater et al., 2007).

Table 5.4.3 displays the percentage of military personnel by Service and gender who reported that they always or usually drank at the specified on-base locations. Overall, personnel reported drinking most often in the barracks/dormitories and in on-base housing (13.8% and 13.2%, respectively). Among males, on-base housing was the most popular place to drink on base, and among females, on-base barracks were the most popular (14.1% and 7.6%, respectively). Among both males and females, the Officers' club was the least popular place to drink (1.5% and 0.6%, respectively). In each Service, males were at twice as likely as females to report that they usually or always drank at on-base housing. Males in the Marine Corps were more than twice as likely as females to report that they usually or always drank in the enlisted club or another club on base. Females in the Navy and Air Force reported drinking in the enlisted club more than males in the Navy and Air Force, but this relation was not significant.

Table 5.4.2

Culture of Drinking, by Service and Gender

Service/Gender	Perceived Drinking Norms					
	Hard to Fit In	Part of This Installation	Part of the Military	Only Recreation Available	Encouraged to Drink	Nonalcoholic Beverages Not Always Available
Army						
Male	13.4 (0.9)	17.4 (1.4)	36.6 (1.5) ²	14.9 (1.1)	19.1 (1.4)	15.8 (1.0)
Female	10.8 (2.6)	14.4 (2.1)	31.2 (2.2) ¹	12.5 (1.7)	15.2 (1.9)	17.1 (2.7)
Total	13.1 (0.9)	17.1 (1.3)	36.0 (1.5)	14.6 (1.0)	18.7 (1.3)	15.9 (1.0)
Navy						
Male	12.0 (0.7) ⁵	14.6 (0.9)	30.7 (0.7)	10.7 (0.8) ⁵	16.7 (0.6)	14.2 (0.5)
Female	14.6 (1.4) ⁴	15.7 (1.6)	32.1 (1.8)	13.7 (1.4) ⁴	18.7 (1.8)	12.6 (1.1)
Total	12.2 (0.7)	14.6 (0.9)	30.7 (0.8)	11.1 (0.8)	16.9 (0.7)	14.0 (0.5)
Marine Corps						
Male	18.9 (0.6)	24.2 (1.2)	42.1 (1.3)	15.5 (0.8)	29.0 (1.1)	18.5 (0.7)
Female	16.2 (2.3)	19.7 (2.9)	41.5 (3.6)	17.8 (2.2)	26.2 (2.9)	16.6 (1.9)
Total	19.7 (0.6)	26.1 (0.9)	41.0 (1.0)	18.5 (0.9)	29.2 (0.9)	17.9 (0.6)
Air Force						
Male	16.4 (0.9) ¹¹	23.4 (1.3) ¹¹	33.2 (0.8)	11.4 (1.0)	23.5 (1.2) ¹¹	13.3 (0.7)
Female	12.8 (1.3) ¹⁰	18.2 (1.6) ¹⁰	30.6 (1.6)	10.9 (1.2)	19.8 (1.7) ¹⁰	11.9 (1.2)
Total	15.8 (0.8)	22.3 (1.2)	32.6 (0.8)	11.4 (0.9)	22.8 (1.2)	13.0 (0.6)
All Services						
Male	14.5 (0.5)	19.1 (0.8) ¹⁴	36.0 (0.9) ¹⁴	13.9 (0.7)	20.9 (0.9) ¹⁴	15.5 (0.6)
Female	12.4 (1.3)	16.2 (1.2) ¹³	32.1 (1.2) ¹³	12.6 (0.9)	18.1 (1.1) ¹³	14.9 (1.4)
Total	14.7 (0.5)	19.5 (0.8)	35.7 (0.8)	14.3 (0.6)	21.2 (0.8)	15.5 (0.6)

Note: Table displays the percentage of military personnel by Service and gender who indicated that they “agreed” or “strongly agreed” with statements about acceptability of consuming alcohol. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of perceived drinking norms are given in Section 2.7.3.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Perceived Drinking Norms, Q19a–g).

Table 5.4.3 Location of Drinking On Base, by Service and Gender

Service/Gender	Location of Drinking on Base					
	Barracks	Enlisted Club	Officers' Club	Other On-Base Club	Recreational Facility	On-Base Housing
Army						
Male	15.3 (1.3) ²	3.2 (0.4)	1.4 (0.3)	2.8 (0.4)	5.3 (0.6) ²	15.4 (1.1) ²
Female	8.7 (2.0) ¹	1.9 (0.7)	0.6 (0.4)	2.1 (0.6)	0.8 (0.5) ¹	7.6 (1.4) ¹
Total	14.5 (1.2)	3.1 (0.3)	1.3 (0.2)	2.7 (0.3)	4.7 (0.6)	14.6 (1.0)
Navy						
Male	9.1 (1.1) ⁵	3.6 (0.6)	1.4 (0.3) ⁵	3.3 (0.5)	5.5 (0.5) ⁵	12.7 (0.9) ⁵
Female	6.3 (0.9) ⁴	3.8 (0.6)	0.6 (0.2) ⁴	3.1 (0.6)	3.9 (0.6) ⁴	5.6 (0.9) ⁴
Total	8.6 (1.0)	3.6 (0.5)	1.2 (0.2)	3.2 (0.4)	5.2 (0.5)	11.5 (0.8)
Marine Corps						
Male	20.3 (0.9) ⁸	4.9 (0.9) ⁸	2.0 (0.4) ⁸	2.8 (0.3) ⁸	7.3 (0.6) ⁸	14.9 (0.9) ⁸
Female	12.7 (2.2) ⁷	2.5 (0.8) ⁷	0.7 (0.4) ⁷	1.0 (0.4) ⁷	3.9 (1.3) ⁷	7.4 (1.3) ⁷
Total	22.8 (0.8)	8.3 (0.7)	2.1 (0.2)	4.0 (0.3)	7.4 (0.4)	14.3 (0.6)
Air Force						
Male	6.5 (0.8)	3.5 (0.5)	1.3 (0.2) ¹¹	4.5 (0.7)	4.4 (0.4) ¹¹	10.4 (0.9) ¹¹
Female	4.7 (0.8)	4.3 (0.7)	0.5 (0.2) ¹⁰	3.8 (0.6)	2.3 (0.5) ¹⁰	4.5 (0.9) ¹⁰
Total	6.1 (0.7)	3.6 (0.4)	1.1 (0.2)	4.4 (0.6)	4.0 (0.4)	9.2 (0.8)
All Services						
Male	13.6 (0.8) ¹⁴	3.5 (0.3)	1.5 (0.2) ¹⁴	3.2 (0.3)	5.4 (0.4) ¹⁴	14.1 (0.7) ¹⁴
Female	7.6 (1.0) ¹³	2.9 (0.5)	0.6 (0.2) ¹³	2.6 (0.4)	1.9 (0.3) ¹³	6.4 (0.8) ¹³
Total	13.8 (0.7)	4.2 (0.3)	1.4 (0.1)	3.3 (0.2)	5.1 (0.3)	13.2 (0.6)

Note: Table displays the percentage of military personnel by Service and gender who reported that they "always" or "usually" drank at on-base locations. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of drinking location are given in Section 2.7.6.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Location of Drinking on Base, Q39a-f).

5.4.4 Location of Drinking off Base, by Service and Gender

Table 5.4.4 displays the percentage of military personnel by Service and gender who reported that they always or usually drank at the specified off-base locations. Overall, the most popular location to drink off base was off-base housing (29.6%) and bars (26.6%). This trend was seen among males and females, with a significantly larger percentage of males endorsing both locations as favorite places to drink. Among both males and females, the least popular place to drink off base was a public location (5.8% and 2.8%, respectively). Females in the Army were more likely than males in the Army to report usually or always drinking in a hotel room, but this relation was not significant.

5.4.5 Perceived Availability and Acceptability of Tobacco Use, by Service and Gender

As seen in Table 5.4.5, the percentages shown are of military personnel in each Service and gender who indicated that they agreed or strongly agreed with the specified statements about availability and acceptability of tobacco products. Surprisingly, almost 60% of personnel reported that the number of places to buy tobacco products at their installation made it easy to smoke. Over 60% of personnel reported that most of their friends in the military used some type of tobacco product. Males overall were significantly more likely than females overall to report that the availability of tobacco products made it easy to smoke, that most of their friends used tobacco products, and that smoking was part of being in the military. When investigating differences within the Services, significantly more females in the Marine Corps than males in the Marine Corps reported that smoking was part of being in the military (32.2% vs. 26.5%, respectively). However, this trend was reversed for Army personnel, with 25.1% of females and 31.3% of males indicating that smoking was part of being in the military. In general, all Services indicated lower endorsement for the belief that smoking was related to being in the military, perhaps reflecting a trend toward less acceptance of the use of tobacco products in the military.

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Table 5.4.4 Location of Drinking Off Base, by Service and Gender

Service/Gender	Drinking Location off Base					Recreational Facility
	House off Base	Bar	Restaurant	Hotel Room	Public Location	
Army						
Male	30.4 (1.7)	25.0 (1.5) ²	18.7 (1.3) ²	7.6 (0.7)	5.4 (0.6)	7.9 (0.9) ²
Female	25.8 (2.6)	16.4 (2.1) ¹	13.3 (2.2) ¹	9.2 (1.9)	2.7 (1.3)	3.4 (1.1) ¹
Total	29.8 (1.6)	23.9 (1.5)	18.0 (1.2)	7.8 (0.7)	5.1 (0.6)	7.3 (0.8)
Navy						
Male	33.2 (1.1) ⁵	27.0 (0.8) ⁵	19.7 (1.0)	8.0 (0.7) ⁵	7.0 (0.5) ⁵	8.4 (0.5) ⁵
Female	24.9 (1.3) ⁴	21.3 (1.4) ⁴	19.1 (1.2)	6.0 (0.7) ⁴	3.1 (0.6) ⁴	3.8 (0.7) ⁴
Total	31.7 (0.9)	26.0 (0.7)	19.5 (0.9)	7.7 (0.6)	6.3 (0.5)	7.6 (0.5)
Marine Corps						
Male	34.4 (1.7) ⁸	35.4 (1.4) ⁸	25.3 (1.1) ⁸	13.7 (0.7) ⁸	10.6 (0.5) ⁸	11.5 (0.6) ⁸
Female	28.4 (2.6) ⁷	21.8 (2.4) ⁷	20.0 (2.2) ⁷	9.4 (1.4) ⁷	6.5 (1.7) ⁷	4.8 (1.6) ⁷
Total	25.9 (1.1)	37.6 (1.1)	24.4 (0.8)	12.6 (0.5)	10.6 (0.4)	10.3 (0.4)
Air Force						
Male	33.2 (1.2) ¹¹	24.9 (1.3)	16.0 (0.8) ¹¹	5.3 (0.3) ¹¹	3.1 (0.3) ¹¹	6.1 (0.4) ¹¹
Female	25.1 (1.8) ¹⁰	22.1 (1.8)	12.7 (1.2) ¹⁰	3.7 (0.7) ¹⁰	1.7 (0.5) ¹⁰	3.2 (0.6) ¹⁰
Total	31.6 (1.0)	24.3 (1.2)	15.4 (0.6)	4.9 (0.3)	2.8 (0.2)	5.5 (0.4)
All Services						
Male	31.7 (1.0) ¹⁴	26.5 (0.9) ¹⁴	19.1 (0.8) ¹⁴	8.0 (0.5)	5.8 (0.4) ¹⁴	8.0 (0.5) ¹⁴
Female	25.7 (1.4) ¹³	19.2 (1.2) ¹³	14.5 (1.2) ¹³	7.2 (1.0)	2.8 (0.7) ¹³	3.5 (0.6) ¹³
Total	29.6 (0.9)	26.6 (0.9)	18.8 (0.7)	8.1 (0.4)	5.7 (0.3)	7.5 (0.4)

Note: Table displays the percentage of military personnel by Service and gender who reported that they “always” or “usually” drank at off-base locations. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of drinking location are given in Section 2.7.6.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Location of Drinking off Base, Q39g-1).

Table 5.4.5 Culture of Tobacco Use, by Service and Gender

Service/Gender	Perceived Availability and Acceptability		
	Availability Makes It Easy to Smoke	Most Military Friends Use Tobacco Products	Smoking Is Part of Being in the Military
Army			
Male	59.9 (1.6)	68.2 (1.5) ²	31.3 (1.3) ²
Female	54.9 (2.4)	54.9 (3.2) ¹	25.1 (1.8) ¹
Total	59.4 (1.5)	66.6 (1.5)	30.6 (1.3)
Navy			
Male	54.3 (0.9) ⁵	56.7 (1.3)	22.7 (0.7)
Female	49.5 (1.8) ⁴	56.8 (2.2)	22.9 (1.7)
Total	53.6 (0.8)	56.7 (1.4)	22.6 (0.7)
Marine Corps			
Male	60.3 (1.1)	67.1 (1.9)	26.5 (1.0) ⁸
Female	60.7 (2.3)	71.1 (2.2)	32.2 (2.2) ⁷
Total	60.9 (0.7)	67.3 (1.4)	26.6 (0.7)
Air Force			
Male	50.7 (0.7)	44.6 (1.8)	18.6 (0.7)
Female	48.5 (1.9)	44.6 (2.4)	17.6 (1.3)
Total	50.3 (0.7)	44.6 (1.8)	18.4 (0.7)
All Services			
Male	57.6 (0.9) ¹⁴	62.4 (0.9) ¹⁴	27.4 (0.8) ¹⁴
Female	52.8 (1.3) ¹³	53.6 (1.7) ¹³	23.2 (1.0) ¹³
Total	57.3 (0.8)	61.5 (0.9)	26.7 (0.7)

Note: Table displays the percentage of military personnel by Service and gender who indicated that they “agreed” or “strongly agreed” with statements about availability and acceptability of tobacco products. The standard error of each estimate is presented in parentheses. Significance indicators identify rows that are significantly different at the 95% confidence level. Definitions of perceived availability and acceptability of tobacco are given in Section 2.7.6.

Source: DoD Survey of Unit Level Influences on Alcohol and Tobacco Use among Military Personnel, 2006 (Perceived Availability and Acceptability, Q67a–c).

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5.5 Summary

5.5.1 Alcohol Use

5.5.1.1 Alcohol Use, by Service and Gender

- Both men and women in all Services reported relatively high levels of any alcohol use, with men

and women in the Marine Corps reporting the greatest amount of drinking during the previous 30 days.

- Marine Corps personnel also reported the highest percentage of hazardous, harmful, and potentially alcohol dependent drinking levels, with the greatest percentage falling within the harmful range. These findings applied to both male and female Marines.
- In general, members of the Air Force and Navy reported less drinking across all drinking variables than members of the Marine Corps and Army.

5.5.1.2 Problem Drinking Levels, by Service and Gender

- Overall, 47.1% of all personnel were drinking at or above hazardous drinking levels.
- Both male and female members of the Marine Corps reported the highest percentages of hazardous, harmful, and possibly dependent drinking.

- In all Services, rates for alcohol dependence were higher among males than among females, with the largest gender difference in the alcohol dependence rate being shown for Marine Corps personnel.

5.5.1.3 *Negative Effects of Alcohol Use, by Service and Gender*

For the purpose of this report, the negative effects of drinking were defined as administrative action, productivity loss, and serious consequences.

- Across Services, females reported fewer negative effects than did males.
- Marine Corps personnel were most likely to report a higher percentage of all three types of negative effects than those in the other three Services; this finding applied to both males and females.
- Air Force personnel reported the fewest negative consequences from drinking.
- For all Service branches, loss of productivity was the most frequently endorsed negative consequence.

5.5.1.4 *Reasons for Drinking, by Service and Drinking Level*

- When reasons for drinking were examined by Service in terms of light, moderate, and heavy drinking, persons in the Marine Corps reported the greatest frequencies across all reasons for drinking categories (i.e., social, peers/culture, feeling/taste, and stress).
- Few persons acknowledged drinking as a result of peer pressure, while a somewhat greater endorsement was given for stress and to relieve boredom.
- The most striking finding was that three to nine times as many heavy drinkers compared with light or moderate drinkers indicated that they drank because of peer pressure or because drinking is part of the military culture.

5.5.1.5 *Negative Effects of Alcohol Use, by Service and Drinking Level*

- Negative effects in general were more strongly endorsed by heavy drinkers.
- The highest rates for serious consequences and productivity loss were found among heavy drinkers in the Army and Marine Corps.
- Navy and Marine Corps heavy drinkers had the highest rates of administrative action.

5.5.1.6 *Alcohol Use, by Service and Combat Exposure*

- More than 80% of all personnel with any combat exposure acknowledged past-month alcohol use.
- For those with high combat exposure, the total number of drinking days among drinkers during the past month was lowest for Air Force personnel compared with the other Services.
- Most Services indicated significantly higher rates of heavy alcohol use among high combat exposure personnel compared with personnel with moderate levels of combat exposure.

5.5.2 *Tobacco Use*

The following are key findings about installation-level influences on tobacco use:

- Among the Services, individual respondents were likely or highly likely to use cigarettes when drinking alcohol, when with others using tobacco, and/or when anxious or stressed.
- Smokeless tobacco was used more frequently when anxious or stressed or when deployed.
- Among the Services, cigarettes were most often used to relieve stress or to get a break from work.
- Smokeless tobacco and cigars were more apt to be used to relieve stress.
- Any cigarette use, daily cigarette use, and cigar use were more likely to be reported by respondents who were deployed regardless of combat status.

5.5.3 *Stress and Coping*

Stress has been shown to exhibit a positive linear relation with alcohol use as well as with other behaviors and health outcomes. Because stress evokes both psychological and physiological responses, it has the potential to seriously affect military readiness. The following summarize our findings.

5.5.3.1 *High Perceived Stress, by Service and Sociodemographic Characteristics*

- More than one in four military personnel reported a high level of perceived stress during the past 6 months.
- The Army showed the highest percentage of personnel reporting high perceived stress at 30.4%;

the Air Force showed the lowest percentage at 16.0%.

- Significantly fewer females in the Air Force reported high perceived stress than females in the other three Services.
- Regardless of Service, more personnel who were married with their spouse not present reported high perceived stress than personnel who were not married or personnel who were married with their spouse present.
- Except for in the Air Force, more personnel in pay grades E4 through E6 reported high perceived stress than other pay grades.

5.5.3.2 *Stress and Use of Alcohol and Tobacco*

- An estimated 34.4% of all personnel who reported high perceived stress indicated heavy alcohol use. The Marine Corps reported the highest percentage of personnel with high perceived stress engaging in heavy alcohol use.
- Among all Services, more than three out of four personnel indicated that they used alcohol to relax.
- Nearly half of personnel in all Services with perceived high stress reported current cigarette use, and nearly one in five reported current smokeless tobacco use.
- The Army had the highest percentage of respondents with high perceived stress who reported cigarette smoking; for smokeless tobacco use, the Marine Corps was highest—with one in four reporting current smokeless tobacco use.
- Nearly two-thirds of personnel in all Services indicated that they used tobacco products to relieve stress.

5.5.3.3 *Coping Style and Its Effect on Alcohol and Tobacco Use*

- Across all sociodemographic groups and Services, more personnel employed predominantly positive coping behaviors than those endorsing negative coping behaviors.
- Women in the Navy (77.7%) and Marine Corps (71.2%) had statistically higher rates of positive coping behavior than did their male counterparts.
- College graduates used more positive coping behavior across military branches than did those with a high school education or some college.

- Percentages of military personnel who endorsed positive coping strategies increased as pay grade increased in all branches of the military.

5.5.3.4 *Stress, Combat Exposure, and Use of Alcohol and Tobacco*

- Among personnel reporting high combat exposure, an estimated 32.2% indicated heavy alcohol use; Marine Corps personnel with high combat exposure reported the highest percentage. This estimate was nearly twice the proportion of Air Force personnel reporting high combat exposure who were heavy alcohol users.
- Significantly more Marine Corps respondents with high combat exposure indicated that they used alcohol to relax than respondents from the other Services.
- Nearly half of all personnel reporting high combat exposure indicated that they were current cigarette users; one in five reported using smokeless tobacco.
- More than half of personnel across Services who indicated high combat exposure reported that they used tobacco to relieve stress.
- Among personnel reporting a high level of combat exposure, nearly 35% reported high levels of stress; this was significantly different from rates of high stress among persons with low or moderate combat exposure.
- Persons reporting a high level of combat exposure were consistently more likely to indicate high overall stress levels than those reporting a low level of combat exposure; this was the case both for individual Services and for all Services combined.

5.5.4 *Culture of Alcohol and Tobacco Use*

5.5.4.1 *Administrative/Policy Influences on Alcohol Use, by Service and Gender*

- The Marine Corps were the most likely to report that a six pack of beer was allowed in their barracks, but they were the least likely to report that a case of beer or bottle of liquor was permitted in their barracks and that there was no limit on alcohol.
- The Air Force was the only Service branch that showed significant gender differences between the three alcohol policy questions.

5.5.4.2 *Culture of Drinking, by Service and Gender*

- One-third of males and females reported that drinking was part of being in the military.

5.5.4.3 *Location of Drinking on Base, by Service and Gender*

- On-base housing was the favored drinking location on base for males and the barracks were the favored drinking location for females.
- The least popular location for drinking on base was the officer's club.

5.5.4.4 *Location of Drinking off Base, by Service and Gender*

- Off-base housing and bars were the most popular locations for drinking off base.
- Public locations, such as a park, beach, or parking lot, were the least favored off-base location for drinking.

5.5.4.5 *Perceived Availability and Acceptability of Tobacco Use, by Service and Gender*

- Approximately 60% of military personnel reported that the availability of tobacco products at their installation made it easier to smoke and that most of their military friends smoked.
- Males overall were significantly more likely than females overall to report that the availability of tobacco products made it easy to smoke, that most of their military friends used tobacco products, and that smoking was part of being in the military.

Appendix A

Focus Group Summary

2006 Unit Level Influences on Alcohol and Tobacco Misuse Phase 1: Focus Groups

**A component of the DoD Lifestyle
Assessment Program (DLAP)**

Focus Group Final Report

January 2007

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*RTI International is a trade name of Research Triangle Institute.

Study Overview

The purpose of the study was to determine the risk factors associated with heavy drinking and tobacco use among individuals at military installations. In order to accomplish these objectives, the study was conducted in two phases: Phase 1 – involved holding focus groups with military personnel using a sample of eight of the 24 installations (two for each service) to be used in the study. The data from the focus group discussions was compiled and analyzed to inform development of a comprehensive survey questionnaire for assessing the individual-level, unit-level, and installation-level factors affecting alcohol and tobacco use patterns. For Phase 2, the survey was administered at 24 military installations (6 per service), data was coded and analyzed, and a final report has been prepared. This report focuses on Phase 1 of the project.

METHODS

Phase 1 of Study: Focus Groups to Identify Individual-, Unit-, and Installation-Level Factors Affecting Alcohol and Tobacco Use

The first phase of the study focused on eliciting information from personnel in three types of units (combat, combat support, and combat services support), military leaders (officer and enlisted), and substance abuse counselors about possible unit-level factors related to alcohol and tobacco use. Focus group interviews were conducted at four continental United States (CONUS) locations and at four locations outside the continental United States (OCONUS) with assumed specific installation and unit-level risk and factors. For example, interviews conducted at OCONUS locations provide information about the dynamic between the local (foreign) setting and the military base environment. Understanding a full range of factors affecting alcohol and tobacco use, allowed the research team to identify variables to include in the subsequent phase 2 survey of personnel at a larger group of military installations.

The focus groups consisted of planned, structured discussions about alcohol and tobacco use with typically 6 to 10 persons per session under the direction of a moderator. The method relies on both the interactive social context of the discussion and on the individual experiences of each of the group members to produce a rich and interesting discussion on a particular topic. Group members were encouraged to talk to each other, react to the comments of others, talk about past experiences they have had that have a bearing on the discussion, and participate by providing other comments or feedback to the discussion. Data from the focus group interviews for this proposal were recorded by a trained note taker or assistant moderator.

When conducting focus groups, it is typically useful to select a reasonably homogeneous group on the basis of major demographic characteristics (Edmunds, 1999; Morgan, 1997; Krueger, 2003). In this study, we conducted focus group interviews with homogeneous groups of personnel with similar unit missions (combat,

combat support, combat services support), military leaders, and substance abuse counselors to determine potential unit- and installation-level risk variables. The similarity in group members generally helped put members more at ease while also helping facilitate a sense of social cohesion.

Following Krueger's (2003) recommendations, we asked three types of questions for the focus group interview: "opening questions," "key questions," and "closing questions." The opening questions asked about general topics related to unit and installation alcohol and tobacco use. These questions were designed to gather information about the group members, to make participants feel comfortable in the group setting, and to train them in group discussion where answers are built on but where consensus building is not necessary. The next 8 to 10 questions were key questions designed to elicit specific responses about unit- and installation-level influences on alcohol and tobacco use. The key questions provided the vast majority of information for subsequent instrument development for phase 2 of the study. The closing questions asked for final conclusions from the group.

While there are a number of different ways of recording and analyzing data, this study employed a note-based data collection approach. Using the focus group interview guide as a template, the note taker/assistant moderator took notes, listing main themes that arose during the discussion. Although the note taker/assistant moderator indicated which group member made a particular comment, participants were not personally identified but were instead indicated as "Respondent 1" or "Respondent 2." Upon completion of the focus group interview, the note taker/assistant moderator met with the moderator and discussed the main themes for each focus group interview question. Data from all groups were summarized, and major themes were summarized across all focus group interviews.

This report summarizes the focus group discussions that were conducted at the installations below between March 2006 and July 2006 for the DLAP Unit Level Influences on Alcohol and Tobacco Misuse survey. Two bases were visited per military branch (one each CONUS and OCONUS), resulting in a total of eight bases. This report provides a background of the project, a summary of activities conducted during Phase 1 of the project, and the resulting summaries from the focus groups.

Installations:

Army:

- Fort Knox, Kentucky
- US Garrison Grafenwoehr, Germany

Navy:

- Naval Station San Diego, California
- Naval Station Pearl Harbor, Hawaii

Air Force:

- Dyess Air Force Base, Texas
- Kunsan Air Force Base, Korea

Marine Corps:

- Camp Lejeune, North Carolina
- Camp Foster, Okinawa

RESULTS

Installation- Level Factors' Influence on Alcohol and Tobacco Use **SUMMARY**

Installation-level factors can be important contributors to alcohol and tobacco use. Location, accessibility to alternate activities, community culture, and leadership combine to affect alcohol and tobacco use patterns.

Alcohol

Focus group participants were asked about their perceptions of alcohol use among installation personnel and about their alcohol use when first arriving at the installation. These items contributed to the reasons for drinking list and helped to identify factors related to changes in alcohol use. For CONUS sites, the primary reasons for drinking centered on boredom, frustration, ease of purchase, and drinking to fit in with friends and co-workers. OCONUS personnel cited the lack of regular "home" responsibilities, stress and loneliness, remote assignments, and the host culture as contributing factors. Although alcohol use was consistently seen as lower than 20 years ago when it was seen as being part of the military, many saw the more recent trend to be increasing use among younger people.

With respect to factors discouraging drinking, personnel across all ranks indicated that military consequences and possible career effects served to limit alcohol use. Use was also more restricted on installations with an abundance of alternate activities and strong leadership. Personnel were well aware of alcohol policies and reported being briefed on policies on a regular basis. Enforcement of alcohol policies was understood to vary widely by Commander.

Men were seen as drinking more frequently and more heavily than women but many saw the trend to be one of increasing use for women, with women being seen as "buddies" who often drink to keep up with men.

Tobacco

Tobacco use among installation personnel was viewed as being widespread. Contributing factors included: peer pressure, boredom, socialization, stress, and needing a break from work. A number of groups reported that many individuals initiate smoking on deployment. Factors discouraging use included a strong health campaign on the installation, cost, and the effect on PT tests.

Unit-Level Factors' Influence on Alcohol and Tobacco Use

SUMMARY

Factors at the unit level can influence decisions to use alcohol and tobacco by the influence of peer pressure, group cohesion, mission, and traditions.

Alcohol

Focus group participants were asked about any particular traditions or rites of passage that involved alcohol use. From the discussions, it is apparent that there are a number of traditions in each Service branch that influence use, from promotion ceremonies to "hail and farewell" celebrations personnel have many opportunities to celebrate important passages with alcohol. Activities such as 50 days at sea, spur rides, coin drop, mess nights, field days, wet downs, dining in, pulling into port, and balls all provide a group opportunity for heavy drinking.

Alcohol use was seen to increase both before and after deployment – particularly if deployed to region where alcohol use is severely restricted. The pre-deployment drinking appears to center around an opportunity to have a last fling while also recognizing that deployment brings with it the risk of not returning. Post-deployment alcohol use is driven by both celebration and stress relief from deployment experiences. The majority of individuals experienced unit deployment (rather than individual deployments). However, both situations are seen as drinking opportunities.

The focus group personnel had differing views of the treatment of non-drinkers. They were often seen as ready-made designated drivers and welcomed into the group but they were also sometimes pressured to drink through jokes and comments about their non-drinking status.

Every group that was interviewed had some experience with alcohol-related incidents within their unit. The consequences to the unit varied widely with some leadership punishing the entire unit, some units ostracizing the drinker, and some seeing it as inconsequential. Incidents ranged from DUIs and fights to public intoxication and domestic violence incidents. The entire unit appears to be affected when one member clearly has an alcohol problem due to the need to have others pick up the slack for the affected individual not pulling his/her weight.

Tobacco

Tobacco use among members in unit was driven by the same factors as at the installation level: stress, socialization, and job-type. A number of groups discussed the restrictions on tobacco use as strong contributors to quitting smoking. On the other hand, deployment was seen as an opportunity for many people to either initiate or

increase tobacco use due to stress, boredom, the need for any sort of stimulation, and peer pressure.

Individual- Level Factors' Influence on Alcohol and Tobacco Use

SUMMARY

Factors at the individual level play a role in decisions to use alcohol and tobacco by virtue of the locations, companions, stressors that are identified as contributors.

When discussing locations for drinking, participants varied widely in describing this aspect of alcohol use. If the installation was located in a large enough community with a number of options for socializing as a young person, personnel tended to stay in that community – the availability of a car naturally influenced location decisions as well. If the surrounding community had few options, personnel reported that they would drive to the nearest city and spend the weekend partying. Weekday alcohol use tends to occur on base, while weekend drinking occurs off base. Almost unanimously, individuals reported “pre-flight” drinking or the consumption of alcohol in private quarters before going out for the evening. The primary reason for this behavior was the cost of alcohol; secondarily, individuals saw this as an opportunity to already feel “high” by the time they got to the club or bar.

Almost all personnel indicated that their drinking companions were fellow military personnel. The distinctive look of military personnel (i.e., hair cut, physical stature) can lead to confrontations with civilians and most participants indicated that they felt more comfortable with other military personnel. Most women reported drinking with their male comrades and feeling as if they were “one of the guys.”

Underage personnel reported no difficulty in obtaining alcohol whether by purchasing without being carded, having a friend purchase, or simply drinking at a friend’s home or with of-age personnel; there appear to be few restrictions on the ability to consume alcohol.

In summary, we found the participants at all of the installations to be open, accepting, and enthusiastic about contributing to the focus group discussions. In general, we found that the lower-rank individuals were more forthcoming with information and often saw this as an opportunity to get things off their chests. While some of the officer groups were more guarded with their comments as if out of concern for not wanting to make the military look bad to outsiders. We consider this effort to have been very successful in providing information to help refine our survey questions in order to be certain that we are asking about issues that are relevant to military personnel.

Survey Implications from Focus Groups

In order to gain a sense of the discussion, comments were compiled for all participants from the eight focus group installations. What follows is a summary of those comments by topic area, with specific suggestions from military personnel for items to consider including on the survey.

Installation Level Factors

Perception of alcohol use among installation personnel

- reasons for drinking item – list:
 - boredom
 - frustration
 - lack of cohesiveness
 - ease of purchase
 - military consequences
 - military status of soldier
 - MOS
 - cost
 - habit
 - acceptance by leadership
 - lack of regular home responsibilities
 - military culture
 - norms about drinking (fit in with friends, co-workers)
 - drink to get drunk
 - types of alcohol and alcohol content
 - ease of purchase
 - pre- and post-deployment drinking
 - military consequences
 - UDP vs. permanent party

Factors that contribute to drinking

- reasons for drinking: list
 - limited availability of alternate activities
 - boredom in off hours
 - absence of recreational activities
 - few consequences
 - lack of mission
 - away from unit
 - alcohol supervision in barracks
 - relative cost of alcohol,
 - influence of restrictions
 - stress

- loneliness/separation from family
- morale
- junior enlisted are treated like children
- lack of respect from enlisted leaders
- job frustration
- availability of alcohol,
- alcohol promotion
- post-traumatic stress

Factors that discourage drinking

- military consequences influence on drinking
- reasons for limiting – (list: , presence of older soldiers, living arrangements, local penalties)
- ask about duty exercises that prohibit drinking (for how long); price, hours alcohol is available reasons for limiting
- base policies, advertising, reasons for limiting – (list: leadership influence), alternative activities – college classes
- commander influence on norms and promoting of other
- military consequences influence on drinking (NJP, career implications), unit-level initiatives (early morning PT, barracks NCO room inspections), command-level initiatives (crash car demonstrations, special speakers, liberty briefs, safety briefs)
- alternative activities – Single Marine program, MCCA events and activities, college classes, library
- dry barracks, freedom of movement, reasons for limiting – (list: losing rank, dry barracks, money, access to alcohol)

Policies for alcohol use on base

- list of ways policy is made known (i.e., if not made know, base may have higher rates); note whether policies are enforced. Distinguish formal and informal policies; also examine programs to contain alcohol use.
- signing that has reviewed policies. Participate in event risk assessments.
- alcohol policy items: penalties for DWI, availability of non-alcohol alternatives, sales, ease of access, price, factors that limit use, sales, barracks, amounts in room
- Suggest a question about whether the potential to get a DUI or DWI impacts how much one drink.
- Suggest a question about how personnel feel about lack of consensus in dealing with drinking infractions
- Suggest a question asking if age limit for drinking should be reduced to 18 on installations where it is still 21
- Question about how “punitive” staff at the gate are (versus the installation being considered “home base/safe”)

Perceptions of tobacco use among base personnel

- start before/after joining, smoke, dip, or both questions, start/stop smoking on deployment. Type of job. Note: those training soldier are not supposed to smoke or talk about smoking in front of trainees.
- perceptions of smoking, perceptions of smokeless tobacco use

Tobacco use policy

- Awareness of rules/policies about tobacco use on base?
- question – are rules easy to get around
- How familiar do you think you are regarding tobacco use policies at your current duty station?

Enforcement of policy

- Are rules enforced or easy to get around
- Differences in policy enforcement within the installation (by unit, company, etc.)
- What are the informal or unofficial ways tobacco policies are enforced.

Consequences for going against tobacco policy

- How strict are your commanders (or whatever the appropriate catch-all title is) with regard to following the tobacco use policies?

Factors that contribute to tobacco use

- basically the same as factors contributing to alcohol use: list
 - stress
 - boredom
 - to get work breaks
 - socialize
 - tobacco is cheap on base
 - bonding ritual
 - can feel left out if you are an abstainer
 - deployment

Factors that discourage tobacco use

- Attendance at health and wellness type class.
- Ask about manning level of Unit—fully manned units may experience less stress
- there programs on your base to help people quit smoking if they want to? (yes/no/not sure)

Unit Level Factors

Particular Rituals, Rites of Passage that Revolve around Drinking

- risk assessment reports
- Assess rituals on base, frequency of occurrence, alcohol availability at these events
- Consider using the term “customs and traditions” rather than rituals. Make sure that rites of passage is “rite” not “right” of passage. List of customs and traditions could be grouped into formal events (balls, functions, funerals) and informal events (sporting events).
- impact of tradition on drinking

Alcohol Use on Deployment

- Deployment as a unit or as a small group.
- Include questions that ask about alcohol use pre-, during, and post-deployment. During deployment questions should differentiate alcohol use aboard ship, in liberty ports, or in transit (awaiting flights to the field), and while deployed in a field setting. Field settings could be differentiated by geographic regions – where were you deployed – Iraq, Afghanistan, etc. Ask a question to see if alcohol use is allowed or not allowed in countries where personnel are deployed.
- How much does drinking change when people get deployed? (increases a lot, increases some, no change, decreases slightly, decreases a lot)

Treatment of Non-Drinkers

- are non drinkers encouraged to serve as designated drivers.
- Note differentiation between the type of peer pressure – encouragement of non-drinkers, moderate peer pressure to drink (through jokes and comments), and strong peer pressure (to convert non-drinkers).

Unit Had Any Issues with Alcohol

- referral to ASAP
- Response options for consequences of alcohol related incidents include financial, career, reputation, and personal consequences.
- Response options for alcohol related incidents include DUIs, fights, coming to work under the influence of alcohol, public intoxication, and underage drinking.
- Are you aware of any very serious issues within the past year resulting from alcohol use (such as rapes, murders, suicides)? (yes/no/not sure)

Consequences

- Response options for consequences of alcohol related incidents include
 - financial
 - career

- reputation
- personal consequences

Affect on Unit When Someone Clearly Has an Alcohol Problem

- Use of rewards for no AR incidents.
- Attitude toward participation in ASAP.
- unit morale
- Effects of alcohol problems on unit include individual readiness, unit readiness, work distributed from person with problem to other unit members

Types of Incidents

- Add these response options to those for “Unit Had Any Issue with Alcohol” question above:
 - alcohol related traffic fatalities
 - vehicular manslaughter
 - domestic violence
 - DUI
 - sexual assault
 - rape
 - physical assault
 - theft
 - property damage
 - underage drinking.

Tobacco Use among Members in Unit

- deployment area
- Ask about tobacco use for smoking only, smokeless only, both
- To what degree is tobacco use impacted by stress? To what extent does tobacco use differ by job/MOS?

Unit Tobacco Use When Arrive

- Screening question either restricted to smoking tobacco (cigarettes, cigars, pipe tobacco) Reasons for smoking include:
 - boredom
 - need for a stimulant
 - to reduce stress
 - ease of access in the field
 - cost
 - lack of enforcement of rules and/or consequences.

Unit Tobacco Use When Deployed

- Screening question either restricted to smoking tobacco (cigarettes, cigars, pipe tobacco) or expanded to include bidis, kreteks, and salvia divinorum. Reasons for smoking include:

- boredom
 - need for a stimulant
 - to reduce stress
 - ease of access in the field
 - tobacco is cheaper
 - more available (sent to them)
 - anger management.
- How do individuals who deploy differ with regard to their tobacco use compared to entire units that are deployed? (Individuals deployed alone are more likely to use tobacco/ less likely/ about the same)

Individual Level Factors

When and Where Drinking Occurs

- List of response options for where people drink could include:
 - Barracks
 - enlisted clubs
 - officer clubs
 - houses off base
 - off-base locations:
 - bars
 - clubs
 - restaurants
 - hotel rooms
 - public locations (parks, beach, parking lots).
- Location/context of drinking; when heavier drinking takes place.

Drinking Companions

- Response options for who do you drink with could include friends made during deployment, soldiers I work with, individuals I don't work with but know, friends, civilian men, civilian women.

Top Reasons for Drinking

- Response options for reasons for drinking include:
 - Social
 - Regulations
 - Stress
 - Money
 - Boredom
 - Social
 - work stress

- social
- financial issues
- marital stress

Stressful Events that Influence People's Drinking

- response options will need to describe different types of stressors:
 - work
 - family
 - marital
 - Deployment/getting underway
 - Inspections
 - being away from home, unable to visit family & friends
 - can't get away because you on an island
 - higher stress the lower level you are
 - Frustration with Command
 - Financial
 - Isolation (location)
 - Women specific stressors: all male work zones

Stressful Events that Influence People's Tobacco Use

- Response options for survey questions include:
 - Same as alcohol
 - Job stress
 - marital issues
 - duty station
 - Deployment
 - work-ups for deployment
 - long work hours
 - separation from family and friends
 - deployment on ships
 - Increased job responsibilities, not all units are 100% manned.
 - Loneliness

Other suggested items

Personnel also suggested the following types of items to consider for the surveye:

- Do you have unit cohesion or a sense of camaraderie?
- Does your unit have personal free time for extracurricular activities?
- If you are married, does your spouse support your participation in unit functions and activities?
- Do you feel that there are focused activities for minorities?
- I have friends or family support that lives within: a) 5 miles b) 25 miles etc.
- What do you do with your free time?
- If I have a problem that I need advice I could go to:

- a) chain of command
- b) fellow service member
- c) chapel
- d) no one
- e) friends
- f) family

- Did you deploy as a unit or individual augmentee?
- Do you think alcohol policies at your installation should be more strict?
(yes/no/not sure)
- What can you do besides drinking?/What kinds of MWR activities are offered at your installation? List: go to the gym (hitting the punching bag instead of the bottle), etc.
- Question suggested by Counselor- Would they rather have civilian or military counselors?

References

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Krueger R. (2003). *Focus groups: A practical guide for applied research* (3rd ed.). Thousand Oaks, California: Sage Publications.

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Appendix B

2006 Department of Defense Survey of Unit Level Influences on Alcohol and Tobacco Use Among Military Personnel



DEPARTMENT OF DEFENSE SURVEY OF UNIT LEVEL INFLUENCES ON ALCOHOL AND TOBACCO USE AMONG MILITARY PERSONNEL

INSTRUCTIONS FOR COMPLETING THE SURVEY

- Most of the questions provide multiple response options. Read all the options before marking your choice. If none of the response options exactly apply to you, choose the option that best fits your situation.
- Use a pencil.
- Put an "X" on the center of the square for your answer.



- Cleanly erase any answer you wish to change.
- Do not make stray marks of any kind anywhere in the booklet.
- For most questions, you should mark only one response for your answer in the column below the question, as shown below:

EXAMPLE: How would you rate your health?

- Excellent
- Good
- Fair
- Poor

- If you are asked to write numbers for your answer, please enter your response as shown below and put an "X" in the appropriate boxes beneath:

EXAMPLE: On how many days in the past 30 days did you drink alcoholic beverages?

- Enter the number of days in the boxes. Use both boxes, ONE number per box. Next, place an "X" in the matching response below each box.

Days
06
<input checked="" type="checkbox"/> 0
<input type="checkbox"/> 1
<input type="checkbox"/> 2
<input type="checkbox"/> 3
<input type="checkbox"/> 4
<input type="checkbox"/> 5
<input checked="" type="checkbox"/> 6
<input type="checkbox"/> 7
<input type="checkbox"/> 8
<input type="checkbox"/> 9

- For some questions, the instructions will ask you to mark all answers that apply, as shown below:

EXAMPLE: What racial group best describes you?

Mark one or more races to indicate what you consider yourself to be.

- White
- Black or African American
- American Indian or Alaska Native
- Asian (for example, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese)
- Native Hawaiian or Other Pacific Islander (for example, Samoan, Guamanian, Chamorro)

Start the survey on the following page . . .

PLEASE DO NOT WRITE IN THIS AREA



SERIAL #

3/8" spine
perforated

The following questions are about your background.

1. How long have you been at this installation?

- Less than 6 months
- 6 to 12 months
- More than 12 months but less than 18 months
- More than 18 months but less than 24 months
- More than 24 months but less than 36 months
- 36 months or more

2. What Service are you in?

- Army
- Navy
- Marine Corps
- Air Force

3. What is your pay grade?

ENLISTED

- E1-E3
- E4-E6
- E7-E9

OFFICER

- W1-W5
- O1-O3
- O4-O10

4. How old were you on your last birthday?

Enter your age in the boxes. Use both boxes, ONE number per box. Place an "X" in the box below the number you write.

Years Old	
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

5. Are you male or female?

- Male
- Female

6. Are you of Spanish/Hispanic/Latino origin or descent?

- No, not Spanish/Hispanic/Latino
- Yes, Mexican American/Chicano
- Yes, Puerto Rican
- Yes, Cuban
- Yes, other Spanish/Hispanic/Latino

7. What racial group best describes you?

Mark one or more races to indicate what you consider yourself to be.

- White
- Black or African American
- American Indian or Alaska Native
- Asian (for example, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese)
- Native Hawaiian or Other Pacific Islander (for example, Samoan, Guamanian, Chamorro)

8. What is your highest level of education?

- Didn't graduate from high school
- GED or ABE certificate
- High school diploma
- Trade or technical school graduate
- Some college but not a 4-year degree
- 4-year college degree (BA, BS, or equivalent)
- Graduate or professional study but no graduate degree
- Graduate or professional degree

9. What is your current marital status?

- Married
- Living as married (living with fiancé[e], boyfriend, or girlfriend but not married)
- Separated and not living as married
- Divorced and not living as married
- Widowed and not living as married
- Single, never married, and not living as married

10. Is your spouse or live-in fiancé(e), boyfriend, or girlfriend now living with you at your present duty location?

- Yes
- No
- I have no spouse, live-in fiancé(e), boyfriend, or girlfriend

11. Is your spouse or live-in fiancé(e), boyfriend, or girlfriend also on active duty?

- Yes
- No
- I have no spouse, live-in fiancé(e), boyfriend, or girlfriend

12. Do you have any children living with you?

- Yes
- No
- I have no children

13. In what type of housing do you currently live?

If dependents are living with you, mark the type of family housing.

- Housing that I rent or lease
- Housing that I own
- On board ship
- Military barracks/dormitory or bachelor quarters
- Military family housing
- OCONUS quarters in theater
- Other (for example, embassy housing)

14. At your current duty station, do you have access to a car to drive for your personal use? Yes No

15. How satisfied are you with the following aspects of your job?

Place an "X" in one of the boxes for each item.

Workplace Issues

	Satisfied	Somewhat Satisfied	Neither Satisfied nor Dissatisfied	Somewhat Dissatisfied	Dissatisfied	Not Applicable
a. The physical environment where my work takes place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. The pace of my work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. The number of people available to get the work done	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. My supervisor's leadership abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. My supervisor's qualifications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. My overall relationship with my supervisor(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. My coworkers' qualifications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. My coworkers getting their work done	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following questions are about your use of alcohol.

16. About how old were you when you began to drink alcohol once a month or more?

Enter the age in the boxes. Use both boxes, ONE number per box. Place an "X" in the box below the number you write.

Years Old	
<input type="text"/>	<input type="text"/>
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

OR

I have never used alcohol at least once a month.

17. What is the policy for the amount of alcohol permitted in your barracks (mark as many as apply)?

- No limit on beer
- A six pack of beer
- A case of beer
- A bottle of liquor
- No limit on liquor
- No alcohol permitted when rooming with someone under the age of 21
- Don't know/Don't live in barracks

18. How strictly is the policy on alcohol enforced?

- Not enforced
- Occasional inspection or room checks
- Routine/regular inspection or room checks

19. Please indicate how much you agree or disagree with the following statements.

Place an "X" in one of the boxes for each item.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know/No Opinion
a. It is hard to fit in at this installation if you don't drink.	<input type="checkbox"/>				
b. Drinking is part of being at this installation.	<input type="checkbox"/>				
c. Drinking is part of being in the military.	<input type="checkbox"/>				
d. Drinking is just about the only recreation available at this installation.	<input type="checkbox"/>				
e. At parties or social functions at this installation, everyone is encouraged to drink.	<input type="checkbox"/>				
f. At parties or social functions at this installation, nonalcoholic beverages are not always available.	<input type="checkbox"/>				
g. Installation leadership is tolerant of off-duty drinking and drunkenness.	<input type="checkbox"/>				

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SERIAL #

20. How often do you have a drink containing alcohol?

- Four or more times a week
- Two or three times a week
- Two to four times a month
- Once a month or less
- Never

21. How many drinks containing alcohol do you have on a typical day when you are drinking?

- 10 or more
- 7 to 9
- 5 or 6
- 3 or 4
- 1 or 2
- Don't drink alcohol

22. For each question below, please indicate how often you do the following.

Place an "X" in one of the boxes for each item.

- | | Never | Less than Monthly | Monthly | Weekly | Daily/ Almost Daily | Don't Drink |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a. How often do you have <u>five or more drinks</u> on one occasion (i.e., at the same time or within a couple of hours of each other)? | <input type="checkbox"/> |
| b. How often during the <u>past year</u> have you found that you were not able to stop drinking once you had started? | <input type="checkbox"/> |
| c. How often during the <u>past year</u> have you failed to do what was <u>normally</u> expected of you because of drinking? | <input type="checkbox"/> |
| d. How often during the <u>past year</u> have you needed a first drink in the morning to get you going after a heavy drinking session? | <input type="checkbox"/> |
| e. How often during the <u>past year</u> have you had a feeling of guilt or remorse after drinking? | <input type="checkbox"/> |
| f. How often during the <u>past year</u> have you been unable to remember what happened the night before because you had been drinking? | <input type="checkbox"/> |

23. For each question below, please indicate whether you have experienced the following because of drinking.

Place an "X" in one of the boxes for each item.

- | | No | Yes, but not in the past year | Yes, during the past year |
|--|--------------------------|-------------------------------|---------------------------|
| a. Have you or has someone else been injured as a result of your drinking? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Has a relative or friend, or doctor or other health care worker been concerned about your drinking or suggested you cut down? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

24. During the past 30 days, on how many days did you drink beer?

- 28-30 days (about every day)
- 20-27 days (5-6 days a week, on average)
- 11-19 days (3-4 days a week, on average)
- 4-10 days (1-2 days a week, on average)
- 2-3 days
- Once in the past 30 days
- Didn't drink any beer in the past 30 days

25. During the past 30 days, what type of beer did you usually drink?

- Regular beer
- Light beer
- Malt liquor
- Ice brewed
- Didn't drink any beer in the past 30 days

26. During the past 30 days, what size cans or bottles of beer did you usually drink? (Beer is most commonly sold and served in 12-ounce cans, mugs, bottles, or glasses in the United States.)

- 8-ounce can, bottle, or glass
- Standard 12-ounce can, bottle, or mug
- 16-ounce ("tall boy") can, bottle, or mug (½ liter)
- Liter or quart (32-ounce) bottle or mug
- 40-ounce bottle (a "forty")
- Didn't drink any beer in the past 30 days

27. Think about the days when you drank beer in the past 30 days. How many beers did you usually drink on a typical day when you drank beer?

- 18 or more beers
- 15-17 beers
- 12-14 beers
- 9-11 beers
- 6-8 beers
- 5 beers
- 4 beers
- 3 beers
- 2 beers
- 1 beer
- Didn't drink any beer in the past 30 days

28. During the past 30 days, on how many days did you drink wine?

- 28-30 days (about every day)
- 20-27 days (5-6 days a week, on average)
- 11-19 days (3-4 days a week, on average)
- 4-10 days (1-2 days a week, on average)
- 2-3 days
- Once in the past 30 days
- Didn't drink any wine in the past 30 days

29. During the past 30 days, what type of wine did you usually drink?

- Regular wine (also called "table" or "dinner" wine)
- Fortified wine (such as Thunderbird, Night Train, sherry, port, vermouth, brandy, Dubonnet, champagne)
- Wine cooler (such as Bartles & Jaymes, Seagram's coolers, Jack Daniel's Original Hard Cola)
- Didn't drink any wine in the past 30 days

30. Think about the days when you drank wine in the past 30 days. How much wine did you usually drink on a typical day when you drank wine? (The standard wineglass holds about 4 ounces of wine. The standard wine bottle holds about 6 glasses of wine.)

- 18 or more wineglasses (3 bottles or more)
- 15-17 wineglasses
- 12-14 wineglasses
- 9-11 wineglasses
- 8 wineglasses
- 7 wineglasses
- 6 wineglasses (about 1 bottle)
- 5 wineglasses
- 4 wineglasses
- 3 wineglasses (about 1/2 a bottle)
- 2 wineglasses
- 1 wineglass
- Didn't drink any wine in the past 30 days

31. During the past 30 days, on how many days did you drink liquor?

- 28-30 days (about every day)
- 20-27 days (5-6 days a week, on average)
- 11-19 days (3-4 days a week, on average)
- 4-10 days (1-2 days a week, on average)
- 2-3 days
- Once in the past 30 days
- Didn't drink any liquor in the past 30 days

32. During the past 30 days, about how many ounces of liquor did you usually have in your average drink? (The average bar drink, mixed or straight, contains a "jigger" or 1 1/2 ounces of liquor.)

- 5 or more ounces
- 4 ounces
- 3 ounces (a "double")
- 2 ounces
- 1 1/2 ounces (a "jigger")
- 1 ounce (a "shot")
- Didn't drink any liquor in the past 30 days

33. Think about the days when you drank liquor in the past 30 days. How many drinks did you usually drink on a typical day when you drank liquor?

- 18 or more drinks
- 15-17 drinks
- 12-14 drinks
- 9-11 drinks
- 6-8 drinks
- 5 drinks
- 4 drinks
- 3 drinks
- 2 drinks
- 1 drink
- Didn't drink any liquor in the past 30 days

34. Do you typically drink more than one type of alcohol when you drink (such as beer and shots of liquor)?

- Yes
- No
- Don't drink alcohol

35. During the past 30 days, about how often did you drink more than one type of alcohol on the same day?

- 28-30 days (about every day)
- 20-27 days (5-6 days a week, on average)
- 11-19 days (3-4 days a week, on average)
- 4-10 days (1-2 days a week, on average)
- 2-3 days
- Once in the past 30 days
- Didn't drink any alcohol in the past 30 days

36. During the past 30 days, what was the largest number of drinks you had on any occasion?

Enter the number of drinks in the boxes. Use both boxes, ONE number per box. Place an "X" in the box below the number you write.

NUMBER OF DRINKS	
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

OR

- Didn't drink alcohol in the past 30 days.

37. During the past 30 days, how often did you drink enough alcohol to feel drunk?

- Every day or nearly every day
- 3-4 times a week
- 1-2 times a week
- 1-3 times a month
- Drank in the past 30 days but never enough to feel drunk
- Didn't drink in the past 30 days

38. During the past 30 days, how many drinks did it take you to feel drunk?

Enter the number of drinks in the boxes. Use both boxes, ONE number per box. Place an "X" in the box below the number you write.

NUMBER OF DRINKS	
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

OR

- Didn't drink alcohol in the past 30 days
- Didn't drink enough alcohol in the past 30 days to feel drunk

39. How frequently do you drink alcohol at the following locations?

Place an "X" in one of the boxes for each item.

	Always	Usually	Sometimes	Never	Don't Drink
On base					
a. Barracks	<input type="checkbox"/>				
b. Enlisted Club	<input type="checkbox"/>				
c. Officer's Club	<input type="checkbox"/>				
d. Other base club	<input type="checkbox"/>				
e. Recreational facility (for example, bowling alley, golf course)	<input type="checkbox"/>				
f. On-base housing	<input type="checkbox"/>				
Off base					
g. House off base	<input type="checkbox"/>				
h. Bar	<input type="checkbox"/>				
i. Restaurant	<input type="checkbox"/>				
j. Hotel room	<input type="checkbox"/>				
k. Public location (for example, park, beach, parking lot)	<input type="checkbox"/>				
l. Recreational facility (for example, bowling alley, golf course)	<input type="checkbox"/>				

40. The following list includes some of the reasons people give for limiting how much they drink.

Please rate how often each reason influences your drinking.

Place an "X" in one of the boxes for each item.

	Always	Usually	Sometimes	Never	Don't Drink
a. I don't drink because drinking is bad for my health.	<input type="checkbox"/>				
b. I don't drink because it costs too much.	<input type="checkbox"/>				
c. I don't drink because my family/friends get upset.	<input type="checkbox"/>				
d. I don't drink because of the military consequences (Nonjudicial Punishment, Letter of Reprimand, Page 13, Article 15).	<input type="checkbox"/>				
e. I don't drink because it goes against my basic values or beliefs.	<input type="checkbox"/>				
f. I don't drink because I'm afraid of becoming an alcoholic.	<input type="checkbox"/>				
g. I don't drink because it makes me do things I'm sorry for later.	<input type="checkbox"/>				
h. I don't drink because it can make me feel sick.	<input type="checkbox"/>				
i. I don't drink because of command influences.	<input type="checkbox"/>				
j. I don't drink because it can lead to losing control over my life.	<input type="checkbox"/>				
k. I don't drink because I am involved in other activities.	<input type="checkbox"/>				
l. I don't drink because of the potential effect on my PT performance.	<input type="checkbox"/>				
m. I don't drink because of the potential impact on my job performance.	<input type="checkbox"/>				

41. The following list includes some of the reasons people give for drinking. Please rate how often each reason influences your drinking.

Place an "X" in one of the boxes for each item.

	Always	Usually	Sometimes	Never	Don't Drink
a. I drink to celebrate.	<input type="checkbox"/>				
b. I drink to relax.	<input type="checkbox"/>				
c. I drink to be sociable.	<input type="checkbox"/>				
d. I drink because it helps me enjoy a party.	<input type="checkbox"/>				
e. I drink because of peer pressure.	<input type="checkbox"/>				
f. I drink because I feel more self-confident and sure of myself.	<input type="checkbox"/>				
g. I drink to relieve stress.	<input type="checkbox"/>				
h. I drink because it makes social gatherings more fun.	<input type="checkbox"/>				
i. I drink to forget about my problems.	<input type="checkbox"/>				
j. I drink to cheer myself up when I am in a bad mood.	<input type="checkbox"/>				
k. I drink because it is part of the military culture.	<input type="checkbox"/>				
l. I drink to help me meet members of the opposite sex.	<input type="checkbox"/>				
m. I drink because I enjoy getting drunk.	<input type="checkbox"/>				
n. I drink because I like the way alcohol tastes.	<input type="checkbox"/>				
o. I drink because I like the way alcohol makes me feel.	<input type="checkbox"/>				
p. I drink to relieve boredom.	<input type="checkbox"/>				
q. I drink because there is little else to do.	<input type="checkbox"/>				
r. I drink because of loneliness or separation from family and friends.	<input type="checkbox"/>				

42. Have you ever had any administrative action taken against you (for example, letter of counseling, letter of reprimand, Article 15, Page 13) because of your drinking?

- Yes
- No

a. If yes, how many times?

- 1 time
- 2 times
- 3 or more times

43. How many times have you had the following experiences during the past 30 days?

Place an "X" in one of the boxes for each item.

	0 Times	1 Time	2 Times	3 or More Times
a. Driven a car when you knew you had too much to drink to drive safely? . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Felt very sick to your stomach or thrown up after drinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Showed up late for duty because of drinking, a hangover, or an illness caused by drinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Gotten into physical fights when drinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Your drinking created problems between you and your boyfriend/ girlfriend (or fiancé[e] or spouse) or another near relative or friend?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Neglected your obligations, your family, or your work for two or more days in a row because of drinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Your drinking has gotten you into sexual situations that you later regretted? . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Been arrested for drunken driving or other drunken behaviors?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Had sex when you didn't really want to because of drinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

44. Please indicate how many workdays in the past 30 days these things have happened to you.

Place an "X" in one of the boxes for each item.

	Number of Workdays in the Past 30 Days		
	2 or More Workdays	1 Workday	None
a. I was hurt in an on-the-job accident.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. I was late for work or left work early.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. I didn't come to work at all.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. I worked below my normal level of performance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. I was drunk while working.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. I was called in during off-duty hours and reported to work feeling drunk.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

45. Please indicate how many workdays in the past 30 days these things have happened in your work environment.

Place an "X" in one of the boxes for each item.

	Number of Workdays in the Past 30 Days		
	2 or More Workdays	1 Workday	None
a. Someone I work with was hurt in an on-the-job accident because of drinking.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Someone I work with was drunk on the job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Someone I work with didn't come in at all because he/she had been drinking.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. I had to do extra work during a shift to cover for someone who had been drinking and could not do his/her own duties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. I was called in during off-duty hours to cover duties for someone who had been drinking. .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following questions are about how you have been feeling, your behavior, and potential stressors in your life.

46. During the past 6 months, how much stress did you experience from each of the following?

Place an "X" in one of the boxes for each item.

	A Lot	Some	A Little	None at All	Does Not Apply
a. Job frustrations	<input type="checkbox"/>				
b. Marital or relationship problems	<input type="checkbox"/>				
c. Being deployed at sea, in the field, or to a remote location	<input type="checkbox"/>				
d. Combat exposure	<input type="checkbox"/>				
e. Having a permanent change of station (PCS)	<input type="checkbox"/>				
f. Problems in my relationships with the people I work with	<input type="checkbox"/>				
g. Problems in my relationship with my immediate supervisor(s)	<input type="checkbox"/>				
h. Concern about my performance rating	<input type="checkbox"/>				
i. Increases in my workload	<input type="checkbox"/>				
j. Decreases in my workload	<input type="checkbox"/>				
k. Conflicts between military and family responsibilities	<input type="checkbox"/>				
l. Working with civilian contractors	<input type="checkbox"/>				
m. Separation from family or friends	<input type="checkbox"/>				
n. Birth or adoption of a child	<input type="checkbox"/>				
o. Finding childcare/daycare	<input type="checkbox"/>				
p. Death in the family	<input type="checkbox"/>				
q. Being far from home	<input type="checkbox"/>				
r. Problems with money	<input type="checkbox"/>				
s. Problems with housing	<input type="checkbox"/>				
t. Health problems (self)	<input type="checkbox"/>				
u. Health problems (family)	<input type="checkbox"/>				
v. Behavior problems of my children	<input type="checkbox"/>				
w. Unexpected events/problems (for example, hurricane, flood, home robbery)	<input type="checkbox"/>				
x. Separation from other members of my unit	<input type="checkbox"/>				

47. When you feel pressured, stressed, or anxious, how often do you engage in each of the following activities?

Place an "X" in one of the boxes for each item.

	Frequently	Sometimes	Rarely	Never
a. Talk to friend or family member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Light up a cigarette	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Have a drink	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Say a prayer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Exercise or play sports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Engage in a hobby	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Get something to eat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Smoke marijuana or use other illegal drugs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Think of a plan to solve the problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Think about hurting myself or killing myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you are having any suicidal thoughts, please seek help immediately. We encourage you to contact your unit's chaplain or a mental health professional. If you live in the United States, you also could contact the counseling hotline: 1-800-784-2433 (1-800-SUICIDE: an anonymous civilian hotline).

48. Did you drink alcohol before entering the military?

- Yes No

49. How does your present drinking at this base compare with your drinking at your prior duty installation?

- This is my first duty installation.
- I drank more at my prior duty installation.
- I drank less at my prior duty installation.
- I drink about the same as I did at my prior duty installation.
- I didn't drink at my prior duty installation.
- I didn't drink at my prior duty installation and don't drink now.

50. How does your drinking during deployment compare with your drinking when you are not deployed?

- I drink more when I am deployed.
- I drink less when I am deployed.
- I drink about the same whether or not I am deployed.
- I have not deployed.

OR

- I don't drink alcohol.

51. Please indicate how much each statement below describes you.

Place an "X" in one of the boxes for each item.

	Quite a Lot	Some	A Little	Not at All
a. I often act on the spur of the moment without stopping to think.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. I get a real kick out of doing things that are a little dangerous.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. You might say I act impulsively.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. I like to test myself every now and then by doing something a little chancy. ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Many of my actions seem to be hasty.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. I'm always up for a new experience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. I like to try new things just for the excitement.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. I go for the thrills in life when I get a chance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. I like to experience new and different sensations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following questions address your use of tobacco.

52. Have you smoked at least 100 cigarettes in your entire life (5 packs or more)?

- Yes No

53. Are you currently a cigarette smoker?

- Yes No

54. Have you started smoking cigarettes since joining the military?

- Yes No
 Don't smoke cigarettes

55. Do any of your supervisors smoke?

- Yes No
 Don't know

56. How old were you when you first started smoking cigarettes regularly? (Smoking regularly means smoking at least one cigarette a day for 30 days or longer.)

Enter the age in the boxes. Use both boxes, ONE number per box. Place an "X" in the box below the number you write.

Years Old	
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

OR

- I have never smoked at least one cigarette a day for 30 days or longer.

57. When was the last time you smoked a cigarette?

- Today
 Not today, but during the past week
 Not this week, but within the past month
 2-6 months ago
 7-12 months ago
 More than a year ago
 Never smoked cigarettes

58. How soon after you wake up do you smoke your first cigarette?

- After 60 minutes
 31-60 minutes
 6-30 minutes
 Within 5 minutes
 Don't smoke cigarettes

59. Do you smoke more frequently during the first hours after awakening than during the rest of the day?

- Yes No
 Don't smoke cigarettes

60. Do you find it difficult to refrain from smoking in places where it is forbidden?

- Yes
 No
 Don't smoke cigarettes

61. Which cigarette would you most hate to give up?

- The first in the morning
 Any other
 Don't smoke cigarettes

62. How many cigarettes per day do you smoke?

- 10 or less
 11-20
 21-30
 31 or more
 Don't smoke cigarettes

63. Do you smoke even if you are so ill that you are in bed most of the day?

- Yes
 No
 Don't smoke cigarettes

64. How does your cigarette smoking during deployment compare with your cigarette smoking when you are not deployed?

- I smoke more when I am deployed.
 I smoke less when I am deployed.
 I smoke about the same whether or not I am deployed.
 I have not deployed.

OR

- I don't smoke cigarettes.

65. During the past 6 months, did you make a serious attempt to stop smoking cigarettes; that is, did you go for a period of time without smoking?

- Yes, I didn't smoke for 24 hours.
 Yes, I didn't smoke for at least a week.
 No, I have not made an attempt to stop smoking cigarettes.
 I didn't smoke cigarettes in the past 6 months.
 I never smoked cigarettes.

66. Have you quit smoking since joining the military?

- Yes
 No
 Don't smoke cigarettes

Continue on the following page . . .

67. Please indicate how much you agree or disagree with the following statements, even if you do not smoke or use other tobacco products.

Place an "X" in one of the boxes for each item.

	Strongly Disagree	Disagree	Agree	Strongly Agree	Don't Know/ No Opinion
a. The number of places to buy cigarettes and other tobacco products at this installation makes it easy to smoke.	<input type="checkbox"/>				
b. Most of my friends in the military smoke or use other tobacco products.	<input type="checkbox"/>				
c. Smoking or using other tobacco products is part of being in the military.	<input type="checkbox"/>				
d. My spouse, fiancé(e), boyfriend or girlfriend, or the person I date disapproves of my smoking (or would disapprove if I did smoke) or my use of other tobacco products.	<input type="checkbox"/>				
e. I don't like being around people when they are smoking or using other tobacco products.	<input type="checkbox"/>				
f. Use of tobacco products is a health hazard.	<input type="checkbox"/>				
g. Use of smokeless tobacco is less harmful to my health than smoking cigarettes.	<input type="checkbox"/>				

68. The following list includes reasons that people sometimes give for why they smoke cigarettes or use another tobacco product on a regular basis. Please rate how often each reason influences your use of tobacco.

Place an "X" in one of the boxes for each item.

	Always	Usually	Sometimes	Never	Never Smoked or Used Tobacco Products Regularly
a. To get a break from work	<input type="checkbox"/>				
b. To fit in with my military unit	<input type="checkbox"/>				
c. To help relieve stress (for example, work, ship duty, deployment)	<input type="checkbox"/>				
d. To stay awake or alert	<input type="checkbox"/>				
e. To socialize	<input type="checkbox"/>				
f. To relieve boredom	<input type="checkbox"/>				
g. To avoid gaining weight	<input type="checkbox"/>				
h. For enjoyment	<input type="checkbox"/>				

69. In general, how likely are you to smoke a cigarette or use another tobacco product in the following situations?

Place an "X" in one of the boxes for each item.

	Extremely Unlikely	Somewhat Unlikely	Neither Likely Nor Unlikely	Somewhat Likely	Extremely Likely	Don't Use Tobacco
a. When I am with people who are smoking or using other tobacco products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. When I am bored	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. When I am offered a cigarette or another tobacco product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. When I am drinking alcohol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. When I am very anxious or stressed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. When I am drinking coffee	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. When I need something to get through a difficult day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. When I get angry about something or at someone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. When things are not going my way and I am frustrated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. When I need to be alert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. When I am deployed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

70. Do you currently use smokeless tobacco?

- Yes
- No

71. When was the last time you used smokeless tobacco?

- Today
- Not today, but during the past week
- Not this week, but within the past month
- 2-6 months ago
- 7-12 months ago
- More than a year ago
- Never used smokeless tobacco

72. Have you started using smokeless tobacco since joining the military?

- Yes
- No

73. During the past 30 days, how often, on average, have you used 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
- A little less than once a month
- Don't use smokeless tobacco

74. Do any of your supervisors use smokeless tobacco?

- Yes
- No
- Don't know

75. How does your use of smokeless tobacco during deployment compare with your use of smokeless tobacco when you are not deployed?

- I use smokeless tobacco more when I am deployed.
- I use smokeless tobacco less when I am deployed.
- I use smokeless tobacco about the same whether or not I am deployed.
- I have not deployed.

OR

- I don't use smokeless tobacco.

76. Do you ever use smokeless tobacco products because it is easier than having to go outside to smoke?

- Yes
- No
- Don't use smokeless tobacco

77. Have you started using smokeless tobacco because of military restrictions on cigarette use?

- Yes
- No
- Don't use smokeless tobacco

Continue on the following page . . .

86. Thinking about all of your combat deployments, how many times have you had each of the following experiences? Place an "X" in one of the boxes for each item.

	0	1-3	4-12	13-50	51+
a. I was sent outside the wire on combat patrols, convoys, or sorties. . . .	<input type="checkbox"/>				
b. I, or members of my unit, received incoming fire from small arms, artillery, rockets, or mortars.	<input type="checkbox"/>				
c. I, or members of my unit, encountered mines, booby traps, or IEDs (improvised explosive devices).	<input type="checkbox"/>				
d. I worked with landmines or other unexploded ordnances.	<input type="checkbox"/>				
e. My unit fired on the enemy.	<input type="checkbox"/>				
f. I personally fired my weapon at the enemy.	<input type="checkbox"/>				
g. I engaged in hand-to-hand combat.	<input type="checkbox"/>				
h. I was responsible for the death or serious injury of an enemy.	<input type="checkbox"/>				
i. I witnessed members of my unit or an ally unit being seriously wounded or killed.	<input type="checkbox"/>				
j. My unit suffered casualties.	<input type="checkbox"/>				
k. I saw dead bodies or human remains.	<input type="checkbox"/>				
l. I handled, uncovered, or removed dead bodies or human remains.	<input type="checkbox"/>				
m. Someone I knew well was killed in combat.	<input type="checkbox"/>				
n. I took care of injured or dying people.	<input type="checkbox"/>				
o. I interacted with enemy prisoners of war.	<input type="checkbox"/>				
p. I witnessed or engaged in acts of cruelty, excessive force, or acts violating rules of engagement.	<input type="checkbox"/>				
q. I was wounded in combat.	<input type="checkbox"/>				

87. Approximately how many total ammunition rounds have you fired from a personal weapon at an enemy during all of your combat deployments?

Enter the number of rounds of ammunition in the boxes. Use all boxes, ONE number per box. Place an "X" in the box below the number you write.

Rounds of Ammunition				
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

