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WORLDWIDE SURVEY OF ALCOHOL AND NONMEDICAL DRUG USE
AMONG MILITARY PERSONNEL: 1982(U) RESEARCH TRIANGLE
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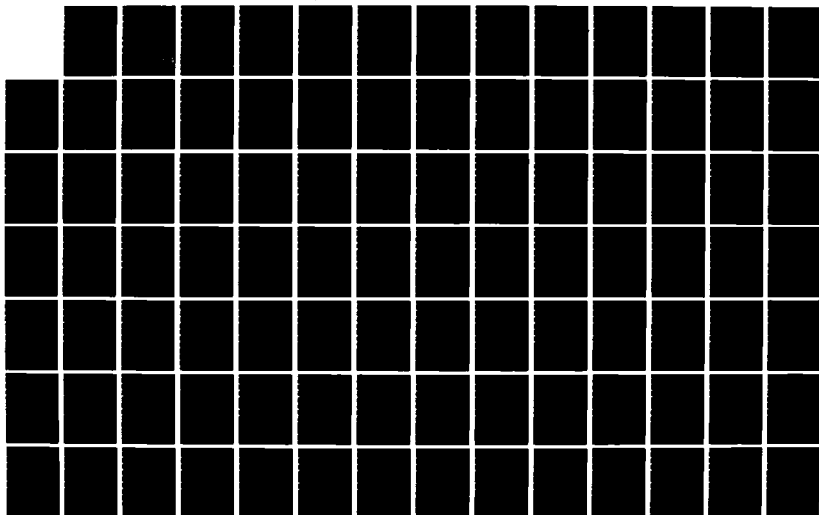
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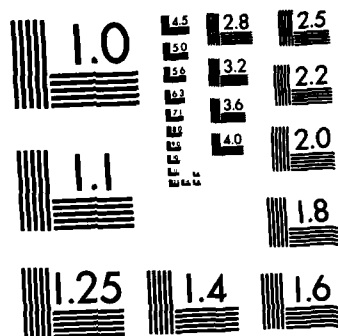
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1982 Worldwide Survey of Alcohol and Nonmedical Drug Use Among Military Personnel

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MDA903-PJ-C-0120

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PREFACE AND ACKNOWLEDGEMENTS

This 1982 Worldwide Survey of Alcohol and Nonmedical Drug Use Among Military Personnel was conducted by the Research Triangle Institute (RTI) under the sponsorship and guidance of the Assistant Secretary of Defense (Health Affairs), Office of Drug and Alcohol Abuse Prevention. The survey provides comprehensive and detailed estimates, with known precision, of the prevalence of alcohol use and nonmedical drug use for the active duty military population worldwide. Information is also provided on some of the physical, social, and work-related consequences of psychoactive substance use in the military population. This is the second in a series of surveys to provide information about trends in the use of drugs and alcohol among military personnel and about the aggregate impact of policy and program interventions.

Many individuals contributed to the success of this study. Among DoD and Military Services personnel, special appreciation is due Army Lieutenant Colonel Fred W. Schaum and Dr. John Allen, the Contracting Officer's Technical Representatives (COTR). LTC Schaum's leadership as COTR was invaluable during the instrument design, sampling, and survey operations phases. Dr. John Allen directed the project and contributed substantially to the data analysis and reporting of the survey results. Excellent liaison between DoD, RTI and the Services was provided by Lieutenant Colonels Art Graves and Don Damron for the Army, Lieutenant Kimberly Tomb for the Navy, Major Richard Hoyle for the Marine Corps, and Major Charles Gunter for the Air Force. The cooperation of all the installation commanders worldwide and the assistance and courtesies provided by their delegates, the Military Liaison Officers, who coordinated the activities of the data collection teams and accomplished the Phase II data collection, were essential for the successful completion of this effort. Finally, appreciation is extended to the nearly 22,000 Service members without whose participation and responses this study would not have been possible.

Under subcontract to RTI, the staff of Intran Corporation accomplished receipt and optical scan processing of all completed survey questionnaires and construction of the raw data file in a timely manner while maintaining excellent quality control.

Many staff members of the Research Triangle Institute contributed significantly to the success of this project in coordinating data collection activities, typing and composing the questionnaire, tabulating data, and completing various data processing tasks. In particular, Kirk Pate's direction was crucial during the Services' implementation of the second-stage sampling effort. Members of the RTI field teams are commended for accomplishing their data collection tasks under rigorous travel and scheduling demands. G.G. Frick and Karen Jones managed the data files, constructed the index variables, and executed the data analyses. Wendell Refior calculated the standard errors of the estimates. Elizabeth Cavanaugh edited this final report and the Highlights report, and Lillian Clark completed the enormous typing and clerical requirements.

Robert M. Bray
Project Leader

- Cocaine use in the past 30 days is significantly lower in the military (4.6 percent) than in the civilian population (9.4 percent). The prevalence of the other types of drugs in the past 30 days is low, and there are no significant differences between the populations. These results are similar to those reported by Burt and Biegel (1980).

F. Multivariate Analyses of Alcohol and Drug Use and Their Consequences (Chapter 9)

The prior analyses provide useful and important information about the effects of alcohol and drug use. However, they are limited by the fact that they have examined the effects of one or two variables (e.g., Service, region, pay grade) but have not controlled for effects of other relevant variables (e.g., demographic variables like age, education, marital status or attitudinal and behavioral variables).

The investigation of the effects on drug and alcohol use of several variables simultaneously is achieved most easily by the use of multivariate statistical techniques such as multiple regression analysis. In multiple regression analysis, a set of independent variables is examined to determine how well they can jointly account for or explain the variation that occurs in the criterion variable of interest. Collectively the set of variables tested in the analysis is referred to as the regression model. The strength of a multiple regression analysis is that each variable is adjusted for the effects of all other variables that appear in the model. Thus it is possible to determine how well the set of variables tested accounts for the variance of the criterion measure and, further, to identify which variables in the set are important in explaining the criterion behavior.

Several exploratory analyses were performed using multiple regression analysis for the 1982 Worldwide Survey. All of these analyses were limited to enlisted personnel (E1-E9) for both theoretical (e.g., officers and enlisted personnel have different motivations for being in the military) and practical reasons (e.g., the highest incidences of drug use and drinking problems occur among enlisted individuals).

The criterion variables to be explained that were examined were: mean number of ounces of ethanol consumed daily; consequences of alcohol use; drug use during the past 30 days; and consequences of drug use. The independent variables used to explain the criterion measures were of two broad types: demographic variables and psychological/behavioral variables. The demographic variables that were included were Service, race, sex, education, marital status, region, pay grade, and age. The psychological/behavioral variables that were examined consisted of a series of indexes (comprised of several items from the questionnaire) along with selected individual items. More specifically the psychological/behavioral indexes included a Problem Behavior Index, Drugs Impair Health/Work Index, Drug Social Support Index, Drug Treatment Climate Index, Alcohol Social Support Index, Alcohol Treatment Climate Index, Drinking Motivation Index, Reasons for Not Drinking Index. Other selected items included church attendance, smoking level, need a drink at work, need an upper at work, ethanol use and drug use patterns.

- Comparison of 1980 and 1982 levels of use among E1-E5's for individual drugs showed an overall pattern of reductions for each drug. Significant decreases in use occurred for all the drugs except PCP and heroin.
- There was a significant decline in the percentage using more drugs than they had planned from 10 percent to 7 percent.
- There was a corresponding reduction in the percentage of personnel reporting that they had been high more than one day at a time from 17 percent to 9 percent.
- There was a decline in the percentage indicating drug dependence from 4 percent to 2 percent.
- There was no significant difference in the percentage who experienced one or more consequences due to drug use, for Total DoD. A significant decrease was observed for the Marine Corps, however, from 15 percent to 9 percent.
- Reports of diminished work performance due to drug use decreased significantly for Total DoD from 21 to 14 percent. Each of the indicators of diminished performance showed a significant reduction at the Total DoD level and each Service showed a corresponding significant reduction.

2. Comparisons with Civilian Population

The civilian data used to compare drug and alcohol use were drawn from the 1982 National Survey on Drug Abuse. Data were for males aged 18-25 in both surveys, the population most at risk for nonmedical drug use. The civilian sample was standardized on the basis of the joint probability distribution of the military with respect to age, marital status, and education. In the two surveys, comparable data on use in the past 30 days were available for alcohol, marijuana, hallucinogens, cocaine, stimulants, tranquilizers, and heroin.

- Alcohol use in the past 30 days is significantly higher in the military population (85.6 percent) than in the comparable civilian population (75.7 percent). Because the civilian survey focused on drug use, more detailed data on the quantity and frequency of alcohol use were not collected. Thus, the meaning of a higher prevalence in the military is not clear.
- Marijuana use in the past 30 days in the military (25.1 percent) is significantly lower than in the civilian population (34.7 percent). In 1980, Burt and Biegel showed that rates in military and civilian populations were similar. Though both rates have dropped since 1980, the reduction found for the military was much greater than that found for the civilian population.

- The percentage experiencing serious consequences due to alcohol use increased significantly (11 to 14 percent for Total DoD). There was a pattern of more consequences for all Services, but only the Army showed a significant increase (11 to 15 percent).
- Overall military personnel in 1982 were significantly more likely to have become drunk, to have stayed drunk, or to have experienced one or more consequences of their drinking.
- There was a significant increase in the percentage of personnel who experienced diminished work performance because of alcohol use in 1982. The pattern was consistent for Total DoD (27 to 34 percent) and for each of the Services. Pay grades E1-E5's (31 to 40 percent) and O4-O6's (12 to 19 percent) both showed significant increases over 1980.

b. Drug Use

- Overall drug use had declined significantly in 1982. For Total DoD, the percentage using any drug changed from 27 percent in 1980 to 19 percent.
- The decline in drug use is primarily attributable to the decline in use among E1-E5 personnel (38 to 26 percent). In this pay grade group, all Services showed a decreasing pattern of use, although only the Navy and Marine Corps achieved statistically significant reductions.
- Although the general pattern of drug use was lower in 1982 than in 1980, E6-E9's in the Army experienced a significant increase in 1982 from 6 percent to 9 percent.
- There was a significant decline in marijuana use during the past 30 days for all military personnel from 26 percent to 16 percent. Much of the decrease seems to be accounted for by the significant decrease in use observed among E1-E5 personnel from 37 percent to 22 percent.
- In general, changes in marijuana use were similar to the changes observed for use of any drugs. This is explained by the fact that marijuana is the drug used most frequently and accounts to a large extent for the general pattern of overall drug use.
- Significant decreases in marijuana use were observed between 1980 and 1982 for the Navy, Marine Corps, and Air Force, but not the Army, although even here there was a trend toward a reduction.
- In the Army, E6-E9's showed a significant increase in marijuana use from 5 to 7 percent.

studies. Despite differences, they are not so serious as to preclude comparisons. The large numbers of personnel surveyed in 1980 and 1982 combined with the similarities of the questionnaire, sample design and procedures offer some measure of robustness to the estimates and suggest that tentative conclusions about levels of use in 1980 and 1982 can be drawn. However, much less can be stated about the reasons for any observed changes. They may be due to a broad range of factors such as shifts in drug enforcement policies, availability, or changes in the level of commitment to use.

a. Alcohol Use.

- Changes in alcohol use between 1980 and 1982 are apparent by comparing average daily ounces of ethanol consumed during the past 12 months.
- The percentage of total military personnel using .5-1.9 ounces a day increased significantly from 26 to 30 percent.
- The percentage of total military personnel using 5 or more ounces a day decreased significantly from 9 percent to 7 percent.
- For the Army and the Air Force, the percentage of abstainers decreased significantly (15 to 11 percent, 15 to 13 percent), and the percentage of personnel using .5 to 1.9 ounces increased significantly (25 to 29 percent, 26 to 30 percent). For the Marine Corps the percentage using .5 to 1.9 ounces increased significantly (28 to 31 percent), and the percentage using 5 or more ounces decreased significantly (12 to 6 percent). The Navy showed no significant differences for any of the levels of consumption.
- Overall the trend is for an increase in the proportion of more moderate drinkers and a decrease in the proportion of the heaviest drinkers.
- There were highly significant increases in 1982 of the percentage of personnel who reported becoming drunk without planning to during the past 12 months. The pattern held for Total DoD (20 to 38 percent) and for each of the Services.
- There was a significant increase in the percentages who reported staying drunk more than one day at a time (11 to 15 percent for Total DoD). The pattern was in the same direction for all of the Services although only the Army and the Air Force showed significant increases over 1980.
- There was an apparent significant increase from 7 percent to 9 percent in the occurrence of alcohol dependence. A possible item omission in the computation of dependence may have produced slight underestimates of the problem in 1980.

- Dependent and problem drinkers were more likely to rate reasons for drinking as important than were nonaffected drinkers.

2. Drug Use

Most military personnel use drugs in private places and with close associates rather than in public places and with acquaintances. However, multiple drug users are no more likely to use drugs in different settings than are single drug users.

- Military personnel were most likely to have used drugs in their own quarters and with military or civilian close friends.
- Military personnel used drugs most frequently in a car or their own quarters and alone, with a mate or date, or close military friends.
- Single and multiple drug users used drugs most frequently in cars and their own quarters.
- Single and multiple drug users used drugs most frequently alone, with a mate or date, or with close military friends.
- Analysis of own-quarters drug use indicated a tendency for those living in civilian housing to use drugs at home more often than those living in military quarters. This pattern was clear for the Navy, Marine Corps and Air Force but not for the Army.
- Users and nonusers of drugs were able to be discriminated on the basis of their agreement with reasons for using drugs.
- The majority of drug users agree that drugs might have negative effects on their work and health. That awareness, however, is not sufficient to deter them from drug use.

E. Selected Comparisons with Military and Civilian Populations (Chapter 8)

Understanding the extent of drug and alcohol use in the military requires comparison of the current survey to other studies of military and civilian populations. Comparisons were made to two other surveys. The first is the 1980 Worldwide Survey (Burt and Biegel, 1980) on which this study is based. The second is the national civilian household survey conducted by the National Institute on Drug Abuse in 1982 (Miller, Cisin, Gardner-Keaton, Harrell, Wirtz, Abelson, and Fishburne, 1983).

1. Selected Comparisons with the 1980 Worldwide Survey

Estimates of drug and alcohol use are available for both 1980 and 1982 Worldwide Surveys. Methodological differences between the surveys (in the questionnaires, the sampling methodology and the field procedures) suggest that caution must be exercised in drawing inferences between the two

- Increases in the frequency of use of marijuana by E1-E5's during the past 30 days is accompanied by increasing numbers who experience serious consequences.

5. Drug Dependence

- The prevalence of drug dependence among E1-E5 personnel is 2 percent overall. The Army, Navy, and Marine Corps report 2 percent dependence and the Air Force reports 1 percent. Drug dependence was defined as the occurrence of any of the following: use of heroin, other opiates, barbiturates or other sedatives 5 or more times/week; detoxified because of drug use; experienced withdrawal type symptoms (nausea, stomach cramps) after stopping use of drugs.
- Drug dependence among E1-E5 personnel is positively related to the number of serious consequences. The percentage who experience serious consequences increases as the number of drugs used increases.

D. Context of Alcohol and Drug Use (Chapter 7)

Military personnel tend to use both alcohol and drugs in private places and with close associates, although heavy alcohol use is somewhat more likely than other alcohol use to occur in public places and with acquaintances. Thus, heavy users of alcohol are more likely to incur a risk of alcohol-related problems.

1. Alcohol Use

Most military personnel drink alcohol in private places and with mates or dates rather than in public places with friends or acquaintances. However, heavy drinkers and dependent drinkers were somewhat more likely to drink in public places, alone, or with acquaintances.

- Military personnel were most likely to have drunk alcohol in their own quarters during the past year.
- Military personnel drank alcohol most frequently in their own quarters and with their mate or date.
- Heavy drinkers were most likely to drink in their own quarters but were more likely than others to drink in cars or bars; they were most likely to drink with military friends and more likely than others to drink alone, with civilian friends, co-workers, and acquaintances or strangers.
- Dependent and problem drinkers were most likely to drink in their own quarters but more likely than others to drink in cars and bars.
- Dependent and problem drinkers were most likely to drink with their mates or dates but more likely than others to drink alone, with military friends, civilian friends, co-workers, and acquaintances or strangers.

cent; 04-06, 31 percent). Intoxication was more common among Navy (60 percent) and Marine Corps (58 percent) personnel than among Army (51 percent) or Air Force (46 percent) personnel.

3. Alcohol Problems

- Alcohol use problem categories indicate that 78 percent of all personnel are not affected by alcohol use (i.e., they do not experience adverse consequences or become dependent from drinking). Nearly all officers (95-96 percent) fit this category.
- Problems resulting from alcohol use (i.e., either adverse effects and not dependent, or dependent) occur more often among E1-E5's (28 percent) and E6-E9's (13 percent) than among officers (3-5 percent). Among Services, the Army (25 percent), Navy (27 percent) and Marine Corps (28 percent) personnel report more problems than Air Force (14 percent) personnel.
- Personnel classified as alcohol dependent experience more negative effects than those not affected or than those affected but not dependent. They show more negative effects in work and social relationships, drink more heavily, and are more involved in the use of drugs.
- Personnel with alcohol problems tend to be males, less educated, younger, single, of rank E1-E5, on active duty 4 years or less, stationed in the North Pacific or Europe, and at the present duty station 3 years or less.

4. Serious Consequences of Drug Use

- During the past 12 months, 10 percent of E1-E5 personnel experienced one or more serious consequences of drug use. Prevalence is higher in the Army (13 percent), the Navy (12 percent) and Marine Corps (11 percent) than in the Air Force (4 percent).
- The prevalence of serious consequences of drug use is higher for work impairment (8 percent) than for physical damage (2 percent), social disruption (3 percent) or other consequences (4 percent).
- Loss of productivity associated with drug use among E1-E5 personnel during the past year was 14 percent. High while working (12 percent) is the most frequently mentioned indicator of productivity loss.
- The occurrence of serious consequences of drug use for E1-E5's is positively related to the number of drugs used. The percentage who experience one or more consequences increases as the number of drugs used increases.

1. Serious Consequences of Alcohol Use

- Negative effects associated with alcohol use are evident among all Services and are closely associated with the level of alcohol consumption.
- During the past 12 months, 18 percent of all military personnel experienced one or more serious consequences of alcohol use. Prevalence rates are higher among the Marine Corps (23 percent), Navy (21 percent), and Army (19 percent) than among the Air Force (11 percent).
- There was little difference in the percentages of incidents involving social disruption (11 percent), physical damage (10 percent), and work impairment (9 percent). "Other consequences" (7 percent) occurred least often.
- Loss of productivity associated with alcohol use during the past year was 34 percent for Total DoD.
- Lowered performance (30 percent) is the most frequently mentioned indicator of productivity loss.
- Among pay grades, productivity loss due to alcohol is highest among E1-E5's (40 percent) but is also reported by substantial segments of other pay grades (19 to 22 percent). Among Services, the loss is highest in the Navy (42 percent) and Marines (38 percent) and lowest in the Army (33 percent) and Air Force (28 percent).
- The occurrence of serious consequences is positively related to the average daily consumption of ethanol. The percentage who experience one or more consequences increases as average daily ethanol volume increases.

2. Alcohol Dependence

- The prevalence of alcohol dependence is 9 percent overall. Among pay grades it is highest for E1-E5 personnel (12 percent versus 1-4 percent for other pay grades). Among Services, the Army (11 percent), Navy (12 percent) and Marines (10 percent) report similar levels that exceed those among Air Force personnel (4 percent).
- Alcohol dependence is positively related to average daily consumption of alcohol. The percentage who are alcohol dependent increases as ethanol consumption increases. Nearly all dependence occurs at average ethanol levels over 2.17 ounces or 5 drinks/day.
- Alcohol intoxication during the past 12 months occurred for 53 percent of DoD personnel. Intoxication occurred more often among E1-E5 personnel (60 percent) than within other pay grades (E6-E9, 37 percent; W1-W4, 29 percent; O1-O3, 40 per-

- Among all E1-E5's 10 percent used marijuana/hashish 1-3 days during the past 30 days, 4 percent 4-10 days, 3 percent 11-19 days, and 5 percent 20-30 days.
- E1-E5's using marijuana 11 or more of the past 30 days occurs most often for the Army (17 percent) both in Europe and in the Other Pacific. For the Navy (9 percent), the Marine Corps (12 percent) and the Air Force (6 percent), it occurs most often in the Other Pacific.

4. Use of Any Drug Except Marijuana: Region and Pay Grade Comparisons

- Use of any drug except marijuana/hashish follows a pattern similar to that of marijuana use. During the past 30 days and past 12 months, respectively, for E1-E5's the highest frequency of use occurred for the Army in Europe (16 and 22 percent) and the Other Pacific (15 and 22 percent); for the Navy in the Americas (13 and 23 percent); for the Marine Corps in the Americas (16 percent--30 day use) and North Pacific (22 percent--12 month use); and for the Air Force in the Other Pacific (9 and 13 percent).
- During the past 30 days, 7 percent of E1-E5's used any drug except marijuana/hashish on 1-3 days; 2 percent on 4-10 days; 1 percent on 11-19 days; and 1 percent on 20-30 days.
- E1-E5's using drugs on 11 or more of the past 30 days occurs most often for the Army (4 percent) in Europe and the Other Pacific. The other Services all show less than 3 percent use, with minor regional differences.

5. Drugs Used Most Often Excluding Marijuana

- Amphetamines, cocaine, and LSD/hallucinogens are the most frequently used drugs other than marijuana.
- Levels of use of these drugs for E1-E5 personnel during the past 12 months are 10 percent for amphetamines, 9 percent for cocaine, 7 percent for LSD/hallucinogens, and 6 percent for other drugs; comparable figures for 30 days are 6 percent, 4 percent, 3 percent, and 4 percent.

C. Negative Effects of Alcohol and Nonmedical Drug Use (Chapter 6)

The use of alcohol and drugs by military personnel results in varying degrees of negative consequences. These include work impairment, physical damage, the disruption of social relationships, and other consequences such as participation in detoxification, rehabilitation, or treatment programs. These negative effects may arise from dependence on alcohol and drugs or may be experienced without such dependence. In either case these negative effects are highly disruptive of the health, social life, and work performance of military personnel. Measures of negative effects are of three types: serious consequences arising from incidents associated with alcohol use and drug use; dependence on alcohol or drugs; and alcohol use problems.

During the past 12 months, 36 percent used one or more drugs compared to 7 percent or less for other pay grades; during the past 30 days, 26 percent used one or more drugs compared to 5 percent or less for other pay grades.

- Patterns of use among E1-E5's are similar to those observed for Total DoD although levels of use are higher.
- Different use patterns exist among the Services for E1-E5s for the various time periods. For "any drug," lifetime use is similar in the Army, Navy, and Marine Corps (54-55 percent) and lower in the Air Force (45 percent). However, 12-month and 30-day use are highest in the Army (42 and 34 percent, respectively), about the same in the Navy and Marine Corps, and lowest in the Air Force.
- Among E1-E5's the use pattern for marijuana across time periods is the same as that observed for any drug. Levels of use are particularly high in the Army. Notably, 40 percent indicate use during the past 12 months and 32 percent during the past 30 days.

2. Use of Any Drugs: Region and Pay Grade Comparisons

- Regional comparisons show overall drug use for the past 30 days is greatest in Europe (27 percent), followed by Other Pacific (20 percent), Americas (18 percent) and North Pacific (16 percent).
- Among the Services, greatest use of any drug during the past 30 days occurs in Europe for the Army (34 percent) and in the Other Pacific for the Navy (18 percent), the Marines (26 percent), and the Air Force (15 percent).
- Among E1-E5's, use of any drug during the past 30 days is greatest in Europe for the Army (42 percent), and in the Other Pacific for the Navy (25 percent), Marine Corps (31 percent), and Air Force (23 percent).
- Data for 12 months generally follow the pattern of the data for 30 days. Most frequent use of any drug occurs among E1-E5's in Europe for the Army (47 percent), in the Americas for the Navy (37 percent), and in the Other Pacific for the Marine Corps (41 percent) and Air Force (29 percent).

3. Use of Marijuana/Hashish: Region and Pay Grade Comparisons

- Use of marijuana/hashish during the past 30 days and past 12 months follows the same pattern noted for any drug use. During these time periods, respectively, use is highest among E1-E5 Army personnel in Europe (39 and 45 percent); among Navy personnel in the Other Pacific (20 percent--30 day use) and Americas (34 percent--12 month use); and among Marine Corps personnel (29 and 39 percent) and Air Force personnel (19 and 26 percent) in the Other Pacific.

- Marijuana or Hashish
- PCP
- LSD and Other Hallucinogens
- Cocaine
- Amphetamines and Other Stimulants
- Tranquilizers
- Barbiturates and Other Sedatives
- Heroin
- Opiates Other than Heroin
- Other Drugs (e.g., any not included above such as over-the-counter drugs and inhalants).

1. Basic Patterns of Drug Use

- Overall, 42 percent of DoD personnel have used one or more drugs for nonmedical purposes, including 27 percent who have used within the past 12 months and 19 percent within the past 30 days.
- Marijuana is the single drug most frequently used for nonmedical purposes. Of all military personnel, 40 percent have used during their lifetimes, 24 percent have used within the past 12 months, and 17 percent have used within the past 30 days.
- For any drug besides marijuana, use is reported by 22 percent during their lifetimes, by 14 percent within the past 12 months, and by 9 percent within the past 30 days.
- Among the Services, the Air Force consistently shows lowest levels of any drug use during lifetime (32 percent), past 12 months (16 percent) or past 30 days (12 percent).
- The Army, Navy and Marine Corps personnel show similar lifetime use of any drug (45-46 percent).
- The Army shows highest use of any drug during the past 12 months (32 percent) with the Marine Corps (30 percent) and Navy (28 percent) only slightly lower.
- The Army shows highest use of any drug during the past 30 days (26 percent) followed by the Marine Corps (21 percent) and Navy (16 percent).
- Military personnel in pay grades E1-E5 are at least five times more likely to use drugs than personnel in other pay grades.

2. Quantity/Frequency Classifications

- The combined quantity and frequency of alcohol use is represented by two measures: the average daily ounces of ethanol consumed and the typology of drinking levels (abstainer, infrequent-light, moderate, moderate-heavy, heavy).
- The average daily consumption of ethanol tends to be low. For Total DoD, 78 percent consume less than 2 ounces of ethanol a day on the average.
- Heavy ethanol consumption of 5 or more ounces per day occurs for 7 percent of all personnel. Among pay grades it is most likely among E1-E5 personnel (9 percent). Among Services it is most likely in the Army and Navy (8-9 percent).
- The classification of personnel by drinking levels shows the modal category to be moderate drinkers, followed by moderate-heavy drinkers. Thirty percent of DoD personnel are moderate drinkers (drink about once a week and small to moderate amounts per occasion), and 26 percent are moderate-heavy drinkers (drink at least once a week and medium to large amounts per occasion).
- The drinking level typology defines 14 percent of personnel as heavy drinkers. Among pay grades 18 percent of E1-E5's are heavy drinkers compared with 3 to 8 percent of other pay grades. Among the Services, the Army, Navy, and Marine Corps have more heavy drinkers (each 16 percent) than the Air Force (10 percent).
- Heavy patterns of drinking for Total DoD occurred more often among males, whites and Hispanics, non-high school graduates, personnel aged 24 and below, personnel unmarried or married with spouse not present, personnel of pay grade E1-E5, and those who had spent 1-3 years on active duty or 7 months to 2 years at their present duty station.
- Overall, analyses of alcohol prevalence show that most military personnel are low to moderate drinkers, but substantial proportions are frequent, heavy drinkers.

B. Prevalence of Nonmedical Drug Use (Chapter 5)

A substantial number of military personnel report use of drugs for nonmedical purposes. The prevalence of nonmedical drug use as reported by respondents is described for the periods of 30 days and 12 months prior to taking the survey and ever during their lifetimes. Respondents to the survey were asked to indicate their levels of nonmedical use of each of the following drugs.

Multivariate analyses examine the joint effects of demographic and psychological/behavioral variables that are important in explaining alcohol and drug use and the consequences of that use. Data are also reported on treatment and prevention programs.

A. Prevalence of Alcohol Use (Chapter 4)

Military personnel in the four Services around the world consume considerable amounts of beer, wine, and hard liquor. For each beverage, respondents were asked to report for the past 30 days: 1) the number of days they drank that beverage; 2) the size of the usual drink; and 3) the number of drinks consumed on a typical day when they drank the beverage. In addition they were also asked to report for the past 12 months the number of days per week or month they typically consumed 8 or more drinks of each type beverage in a single day.

To assess alcohol use, measures were constructed that included frequency and quantity of beverage use including primary beverage (i.e., the beverage consumed most often during the past 30 days); a quantity/frequency index of average daily ounces of ethanol; and a typology of drinking levels.

1. Alcohol Use During the Past 30 Days

- The use of alcohol among military personnel is almost universal. Of all military personnel, 77 percent drank beer, 38 percent drank wine and 53 percent drank hard liquor during the past 30 days. Overall, 84 percent of all military personnel drank their "primary beverage" during the past 30 days.
- The use of alcoholic beverages is highest among 04-06 personnel. Levels of use range from 69 percent for hard liquor (compared to 47 to 57 percent for other pay grades), 80 percent for wine (versus 31 to 63 percent), 81 percent for beer (versus 69 to 78 percent); and 91 percent primary beverage (versus 83 to 90 percent).
- Nearly all military personnel drink alcoholic beverages, but the frequency with which they drink is generally low. For Total DoD, 32 percent consumed their primary beverage 1-3 days a month and 26 percent 4-10 days a month.
- The use of primary beverage 20-30 days a month occurs more often among 04-06's (20 percent) than among E1-E5's (13 percent), E6-E9's (11 percent) or O1-O3's (8 percent).
- The modal quantity of any type of alcohol consumed in a typical drinking day is low, 2-3 drinks, and is the same for all Services and pay grades.
- For all beverages heavy consumption, 8 or more drinks on a typical drinking day during the past 30 days, occurs most often among E1-E5 personnel (16 percent beer, 2 percent wine, 8 percent hard liquor). For E6-E9's, O1-O3's and 04-06's, it occurs substantially less often (1-5 percent beer, 0-1 percent wine, 0-3 percent hard liquor).

EXECUTIVE SUMMARY

This report describes the 1982 Worldwide Survey of alcohol and nonmedical drug use in the military. The data were obtained through a survey that was administered to a representative sample of all active duty military personnel below pay grade 07. A two-stage sampling design was used that resulted in the selection of 58 first stage units (installations) and 26,964 sample individuals.

The first stage sampling frame was stratified by Service (Army, Navy, Marine Corps, Air Force) within four broadly stratified geographic regions of the world. The geographic regions and the areas they encompassed were:

- Americas -- Alaska, Canada, Continental United States (CONUS), Greenland, Iceland, Antigua, Bermuda, Cuba, Diego Garcia, Panama, Puerto Rico
- North Pacific -- Republic of Korea, mainland Japan, Okinawa
- Other Pacific -- Australia, Canton Enderbury, Gilbert Ellice, Guam, Hawaii, Johnston Atoll, Midway, Pacific Trust, Philippines, Wake
- Europe -- Belgium, West Germany, Greece, Italy, Netherlands, Portugal, Spain, Turkey, United Kingdom

A total of fifteen first stage strata were defined (one for each Service in each region except for Marines in Europe which were sampled in conjunction with the Navy in Europe).

Second stage sampling units were lines on the personnel rosters of the organizational units selected at the first stage of sampling. The second stage frame was stratified into five pay grade groups (E1-E5's, E6-E9's, W1-W4's, O1-O3's, and O4-O6's) within each first stage unit, except for the Air Force which does not have warrant officer grades.

Data collection from the four Services was achieved in two phases. At phase I, two-person RTI field teams traveled to 58 major installations and administered surveys in group sessions during a two-day period. At phase II, following the field team visit, the Military Liaison Officer at each installation obtained additional questionnaires from personnel selected for the survey who did not participate during phase I. Usable questionnaires were obtained from 21,936 personnel.

The focus of the report is on understanding the nature and extent of alcohol and nonmedical drug use and the resulting consequences of that use in the military services. Data examined the prevalence of alcohol use, the prevalence of nonmedical drug use, negative effects and consequences that result from alcohol and drug use, and the context of alcohol and drug use. Comparisons are made to the military in the 1980 Worldwide Survey and to civilians in the general population from the 1982 national household survey.

The regression analyses that were conducted used all of the demographic variables noted above and relevant subsets of the psychological/behavioral variables. For each analysis, a weighted least squares approach was followed in which all variables that were being examined in a particular model were included simultaneously in the model analyses. Since the demographic variables were listed in the model before the psychological variables, it is possible to examine the explanatory effects of the demographic variables by themselves as well as that of the total set of variables. Further, by subtracting the R^2 of these two, the contribution of the psychological/behavioral variables to the total variance explained can be assessed.

1. Average Ethanol Consumption

- . The regression model of average daily ounces of ethanol for enlisted personnel examined 17 variables (8 demographic, 9 psychological/behavioral) and explained 24 percent (R^2 for complete model) of the variation of the ethanol index.
- . Overall demographic variables performed rather poorly in explaining ethanol consumption. By themselves, they explained only 6 percent of the variation in ethanol consumption.
- . Demographic variables that showed significant differences were the Hispanic/white racial contrast, sex, marital status and the Americas/Europe regional contrast. Hispanics consume .265 ounces/day more ethanol than whites. Males consume nearly half an ounce/day (.481) more ethanol than females. Single personnel or those married with their spouses not present consume .391 ounces/day more than those who are married with a spouse present.
- . In contrast to demographic variables, psychological/behavioral variables in the model explain most of the variation in ethanol consumption. The explained variance increases by 18 percent over that with the demographic variables alone.
- . All but one of the psychological/behavioral variables are highly significant. Problem behaviors and drinking motivation are important indicators of ethanol consumption. A change in one standard deviation on either scale is associated with a change of about four-tenths of an ounce (approximately one drink) of daily ethanol consumption (.420 and .453, respectively). Drug Use Patterns also contribute to an understanding of ethanol consumption. Marijuana only users consume approximately four-tenths of an ounce/day more alcohol than nonusers. Any other use of drugs either singly or in combination is accompanied by an increase of nearly three-fourths of an ounce/day (.737) over that consumed by marijuana only users.
- . There were no significant differences among the Services in ethanol consumption after controlling for all other variables in the regression model. In contrast, without controlling for any variables,

highly significant differences do occur among the Services. This suggests that existing Service differences in ethanol consumption can be explained by differences in demographic and psychological/behavioral characteristics.

2. Alcohol Use Consequences

- . The regression model for the number of alcohol use consequences during the past 12 months among enlisted personnel examined 18 variables (8 demographic, 10 psychological/behavioral) and explained 29 percent of the variation (R^2 for complete model) in the number of consequences experienced.
- . Demographic variables were relatively unimportant in accounting for alcohol consequences, explaining only 4 percent of the variation. Race was the only significant demographic variable. Hispanics experience .129 more consequences than whites, and whites experience .111 more consequences than blacks.
- . Psychological/behavioral variables were clearly the important ones in explaining alcohol use consequences. Together they accounted for 25 percent of additional variation beyond that of the demographic variables.
- . Among the psychological/behavioral variables, all but two were statistically significant. The most salient variables from this set are problem behaviors, drug use patterns and drinking motivation. An increase in one standard deviation in the problem behavior index is associated with an increase of .456 consequences on the average. Drug use that encompasses more than marijuana only use is accompanied by an increase of .276 consequences, and an increase of one standard deviation on the drinking motivation index is expected to produce an increase of .176 consequences.
- . No significant Service differences occurred after adjusting for all other parameters in the regression model. This contrasts with notable differences among Services prior to controlling for other variables.

3. Drug Use During the Past 30 Days

- . The regression model for 30 day drug use examined 18 variables (8 demographic, 10 psychological/behavioral) and explained 27 percent (R^2 for complete model) of the variation in drug use behavior.
- . Demographic variables were less important than psychological/behavioral variables in explaining drug use behavior. They accounted for 9 percent of the total variation. Significant differences occurred for Service, education, marital status, region, pay grade, and age, but even among these, regression parameters were quite small. Probabilities of greater drug use were associated with being in the Army compared to the Air

Force, and in the Air Force compared to the Navy. Additionally, there is a significantly increased probability of drug use for those who are less educated, single or married with spouse not present, younger, of E1-E5 pay grade, and serving in Europe compared to the North Pacific.

Psychological/behavioral variables explained most of the variation of drug use behavior in the regression model, contributing an additional 18 percent of the total 27 percent of explained variance. All of the psychological/behavioral variables were significant. The most important variables were the Drugs Impair Work/Health Index, Drug Social Support Index, and the Problem Behavior Index. For example, change of one standard deviation among beliefs that drug use is not harmful to health and work performance is associated with an increase of .10 in the probability of drug use.

Before adjusting for any other variables, large differences exist among the Services in the level of drug use. After controlling for all other variables in the regression model, some significant differences remain between Services although they are relatively small. Notable among the adjusted means is the finding that the Navy replaces the Air Force as the Service with the lowest probability of drug use. The Air Force actually has the lowest unadjusted level of drug use, but the regression analyses suggest that this would probably not be the case if the demographic and psychological/behavioral variables were roughly comparable among the Services.

Drug use behavior appears to be more a function of psychological (e.g., beliefs and attitudes) and behavioral (e.g., problem behavior) characteristics than of demographic characteristics.

4. Drug Use Consequences

The regression model for the number of drug use consequences during the past 12 months among enlisted personnel examined 17 variables (8 demographic, 9 psychological/behavioral) and explained 13 percent of the total variability.

Demographic variables were very weak in explaining consequences of drug use, accounting for only 2 percent of the variance. None of the demographic variables was significant.

Psychological/behavioral variables explained nearly all of the variation of drug use consequences in the regression model. They accounted for an additional 11 percent of the variation, increasing the total variation accounted for to 13 percent.

- Several of the psychological/behavioral variables are significant, but the problem behavior index and drug use pattern stand out as the most important variables. An increase in the problem behavior index of one standard deviation is associated with an increase of .239 consequences. Similarly, use of drugs besides marijuana only is accompanied by an increase of .277 consequences.
- No significant differences appear among Services in the number of adverse drug use consequences after adjusting for all other variables in the regression model. This contrasts with significant differences among Services prior to adjusting for these variables.
- Taken together, all regressions of drug and alcohol use and the consequences of that use are better explained by psychological/behavioral variables than by demographic variables.
- In general there was a lack of significant adjusted differences among Services and among regions. These findings suggest that differences in drug and alcohol use and consequences are partly a function of the differing demographic and psychological/behavioral composition among the Services.

G. Treatment and Prevention Programs (Chapter 10)

Data about alcohol and drug use prevention and treatment experience were obtained from respondents to the Worldwide Survey. Perceptions of treatment policies and actual treatment experience were examined both for alcohol use and drug use.

- Slightly under half (45 percent) of the respondents agreed that personnel at their installation sincerely try to help people with a drinking problem. The perception differs by rank with E1-E5's least likely to agree (41 percent versus 48 to 57 percent for other pay grades).
- Differences in perceptions that installation personnel try to help people with alcohol problems varied across alcohol problem categories. Overall, those who were dependent had the lowest belief that personnel try to help (42 percent). Forty-five percent of those affected (45 percent) but not dependent felt that way.
- About half of the respondents believe that installation personnel try to help people who have drug problems.
- Of those who report alcohol problems, only 24 percent seek treatment.
- E6-E9 personnel show the highest rate of help or treatment (about 10 percent) for alcohol use.

- About half of the people getting help in alcohol programs reported that they received it during the past 12 months.
- Drug programs have approximately half the number seeking help as do alcohol programs.
- E1-E5's (63 percent) are less aware of programs than personnel in other pay grades (81 percent to 88 percent).
- Awareness of alcohol programs varies by Service. In the Air Force, 80 percent of E1-E5's know about a program compared to 60 percent in the Army and Navy and 70 percent in the Marines.
- Awareness of drug education programs or classes is highly similar to awareness of alcohol education classes.
- About a third of personnel (36 percent) reported attending an alcohol education class during the past year.

1. INTRODUCTION

In the Armed Forces the misuse of alcohol and the use of drugs for nonmedical purposes are recognized problems that impact on the state of military readiness essential to preserve the national security. Approaches to effective prevention, intervention and treatment, however, cannot be developed and executed without a clear understanding of the nature and extent of these problems. This suggests the need for comprehensive, broad-based data about the prevalence of alcohol and nonmedical drug use and the adverse consequences resulting from such use.

A systematic effort to obtain data that can be used to guide and evaluate program policies was begun in 1980 under the direction of the Assistant Secretary of Defense (Health Affairs). A series of recurrent surveys was instituted to study drug and alcohol use in the military. Results from these surveys will be used to assess various aspects of the drug and alcohol abuse prevention program, to determine the appropriateness of the emphasis placed on the program elements, to examine the impact of current and future program policies, and to extend knowledge and understanding of drug and alcohol use and problems in the military.

A. Overview

This report describes the second study in the series, the 1982 Worldwide Survey of alcohol and nonmedical drug use in the military, which was conducted by the Research Triangle Institute (RTI). Seven specific objectives were identified for this research effort:

- . Determine the prevalence of alcohol and drug use within the military services in terms of physical, social, and work consequences, and physical and psychological dependence.
- . Determine the demographic characteristics and behavioral factors associated with alcohol and drug abuse.
- . Assess the effects of alcohol and drug use on personal well-being and job performance through self reported consequences.
- . Determine the social and family climate involved in the use of alcohol and drugs.
- . Assess the admitted reasons for and for not using alcohol and drugs.

- . Determine the history, availability, and success of treatment, the number who have sought treatment, and whether the treatment was in or outside the DoD.
- . Compare alcohol and drug use of the military high risk subpopulation to similar subpopulations in civilian society.

To meet these objectives, an anonymous survey was administered to a representative sample of all active duty military personnel below pay grade 07. A two-stage deeply stratified sampling design was used. A sample frame was first constructed for each Service that placed all eligible personnel into one of 475 first stage units that shared geographic proximity. Applying randomization procedures to the total frame resulted in the selection of 58 first-stage units (installations) that were stratified by Service and four geographic world regions (Americas, North Pacific, Other Pacific, Europe). Randomization procedures were then applied to personnel at the 58 first-stage units to select sample individuals who were stratified within five pay grade groupings (E1-E5, E6-E9, W1-W4, O1-O3, and O4-O6).

Data collection from the four Services was achieved in two phases. At phase I data collection, two-person RTI field teams traveled to 58 major installations and administered surveys in group sessions during a two-day period. Following the field team visit, the Military Liaison Officer (MLO) at each installation conducted phase II data collection over a period of several weeks among personnel selected for the survey who did not participate during phase I. The data collection yielded an 84 percent response rate of 21,936 survey questionnaires.

B. Scope of the Report

The present report describes the methodology and results of the data analysis for the 1982 Worldwide Survey. Literature providing background for the current research is reviewed in chapter 2. Next the methodology of the study is discussed in chapter 3. Chapter 4 presents data on the prevalence of alcohol use, and chapter 5 gives data on the prevalence of nonmedical drug use. In chapter 6 negative effects and consequences of alcohol and drug use are examined. Chapter 7 provides a discussion of the contexts associated with the use of alcohol and drugs. Comparisons are made in chapter 8 of our current data to those of the military in the 1980 Worldwide Survey and to those of civilians in the general population from a recent national survey.

Following this, chapter 9 reports multivariate analyses that examine jointly the effects of demographic and psychological/behavioral variables that are important in accounting for alcohol and drug use and the consequences of that use. We conclude with a discussion in chapter 10 of treatment and prevention programs.

2. BACKGROUND AND RELATED RESEARCH

An understanding of past research on drug and alcohol use provides a context that is helpful in appropriately analyzing and interpreting the data available from the 1982 Worldwide Survey. In this chapter, some of the key background information drawn from civilian and military populations are briefly outlined. We begin with a discussion of drug and alcohol use in the civilian population, considering both the demographics of high-use groups and the problems that result from use. This is followed by a consideration of drug and alcohol use in the military.

A. Drug and Alcohol Use in the General Population

Because, as will be shown in this report, alcohol and drug use are primarily problem areas for young adults in the military, this discussion concentrates on those between about 18 and 25 years of age in the general population.

General population surveys of alcohol and drug use have established that alcohol use is the norm among Americans (Cahalan, Cisin, & Crossley, 1969; Clark & Midanik, 1981). Some experience with alcohol and current drinking are most common among young adults between 18 and 25 years old (Miller, Cisin, Gardner-Keaton, Harrell, Wirtz, Abelson, & Fishburne, 1983). A survey series sponsored by the National Institute on Drug Abuse (NIDA) shows increases in lifetime prevalence (13.7 percent) and past month use (3.2 percent) for this age group between 1974 and 1979. Between 1979 and 1982, however, the same general population surveys showed a decline in lifetime use (0.7 percent) and a statistically significant decline in past month use (10.3 percent) (Miller et al., 1983). Another NIDA survey series, this one conducted annually since 1975, showed a continuing rise in lifetime prevalence but a decrease in 30-day prevalence for high school seniors between 1979 and 1982 (Johnston, Bachman, & O'Malley, 1982).

Marijuana use and cocaine use have been of considerable interest in the past few years because of their recent pervasive use. Between 1972 and 1979, there was a 20.3 percent increase in lifetime prevalence of marijuana use and a 18.4 percent increase in cocaine use for those in the 18-25 age group. The past month prevalence rate increases were 9.7 percent for marijuana and 0.8 percent for cocaine. Between 1979 and 1982, however, both lifetime and past month marijuana rates declined (68.2 percent to 64.1 percent and 16.7 percent to 11.5 percent). Both changes are statistically significant. Cocaine use,

however, continued to rise in this age group. Lifetime prevalence went from 9.1 percent in 1972 to 28.3 percent in 1982; past month prevalence rose from 0.6 percent to 1.6 percent in the same time period. In the NIDA survey of high school seniors, a decline in lifetime prevalence in marijuana use has been recorded since 1979 (from 60.4 percent to 58.7 percent in 1982), and a decline in 30-day prevalence has been recorded since 1978 (from 10.7 percent to 6.3 percent in 1982. After rising steadily between 1975 and 1981, cocaine use showed a nonsignificant decline for both lifetime and 30-day periods between 1981 and 1982.

Nonmedical drug use showed a general increase during the 1970s. In the 18-25 age group, there were increases in lifetime prevalence rates for stimulants (6.2 percent), sedatives (7.0 percent), and tranquilizers (8.8 percent) between 1972 and 1979. Heroin use declined (1.1 percent). Hallucinogens, on which data were not tabulated in the 1972 survey, increased 8.8 percent between 1974 and 1979 (Miller et al., 1983). Findings for high school seniors do not parallel the NIDA general population survey. Lifetime prevalence rates for stimulants in 1979 were higher than all previous years, but rates for sedatives, tranquilizers and heroin were all lower than any of the preceding four years. In 1979 lifetime prevalence rate for hallucinogens was lower than three of the four preceding years (Johnston et al., 1982).

The 1982 NIDA general population survey appears to confirm other evidence of a leveling or, even, a decline in prevalence rates for many drugs. Between 1979 and 1982, declines in lifetime prevalence for 18-25 year olds were seen for heroin (3.5 to 1.2 percent), hallucinogens (25.1 to 21.1 percent), stimulants (18.2 to 18.0 percent), and tranquilizers (15.8 to 15.1 percent). Rates for sedatives, however, continued to rise to 18.7 percent in 1982. In the same period, high school seniors also reported a decline in lifetime prevalence for both hallucinogens and tranquilizers. Though the rate for sedatives increased in this period, it declined between 1981 and 1982. Use of stimulants, however, rose steadily between 1979 and 1982.

Thirty-day prevalence rates from the NIDA general population survey, as lifetime prevalence rates, show decreased use of hallucinogens and tranquilizers between 1979 and 1982 (4.4 to 1.7 percent and 2.1 to 1.6 percent). Unlike the lifetime rates, however, use of stimulants increased between the survey years (3.5 to 4.7 percent) and use of sedatives decreased (2.8 to 2.6 percent). High school seniors in the Johnston et al. survey showed no change

in past month prevalence of hallucinogens or tranquilizers between 1979 and 1982. Sedative and stimulant rates increased over the years, though a decline was noted in stimulant use between 1981 and 1982.

1. Demographics of High-Use Populations

Data are available that identify the most likely users of alcohol and drugs. Information summarized by the National Institute on Alcohol Abuse and Alcoholism (1981) from a variety of studies reveals several important findings: (1) most young adults, particularly males, between the ages of 18 and 34 use alcohol and have used other drugs, (2) the heaviest single-event consumers are males between 18 and 24, and (3) people most at risk for alcohol dependence and substance abuse problem incidents are young adult males who drink heavily and use multiple drugs.

Widespread use of most drugs besides alcohol, is a relatively recent phenomenon and is generally attributable to youth. Little is known about the persistence of use across time or the long-term effects of single or multiple drug use. High prevalence, however, does place great numbers at risk of developing acute or chronic substance abuse problems.

Data from Fishburne, Abelson and Cisin (1980) and Miller et al. (1983) show that young adults who currently use marijuana are more likely to be male, not a high school graduate, from the Northeast, and from a metropolitan area. In the 1979 survey, current users of marijuana were more likely to be white; in 1982 current users were more likely to be nonwhite. In 1982 current cocaine users were most likely to be male, white, from the Northeast, from a large metropolitan area, and college graduates. Users of psychotherapeutic drugs (stimulants, sedatives, tranquilizers, and analgesics) among young adults were more likely to be males, whites, from the North Central states, and from a nonmetropolitan area. These regional and metropolitan differences were not seen in the 1979 data. In 1982, those who had not finished high school and those who dropped out of college were slightly more likely to be users of one or more of these psychotherapeutic drugs.

2. Problems Stemming from Use

Alcohol abuse and nonmedical use of other drugs have been estimated to affect directly or indirectly as many as 20 percent of all Americans (NIAAA, 1981). These effects are manifested in a number of ways.

For young adults, the effects of chronic alcohol abuse are not usually pertinent. The psychoactive effects of alcohol on physical and mental performance are usually felt immediately but only for a short duration and may result in no adverse long-term consequences. Nevertheless, the impairment in physical and mental capacities associated with even light alcohol use results in diminished performance and high proportions of problem incidents related to use (e.g., traffic accidents, violence, short-term illness, absenteeism). For older adults whose drinking has been chronic, there are often physiological dependence, addiction, and long-term organic deterioration as well as severe social effects and costs. A study using 1977 data put the annual social cost of alcoholism at more than \$49 billion. This includes \$2 billion for motor vehicle accidents, \$6 billion for treatment and support, and \$26 billion in reduced productivity (Cruze, Harwood, Kristiansen, Collins, & Jones, 1981). A more recent study by the Office of Technology Assessment puts the current cost at \$120 billion a year (1983).

The effects of drug abuse are also severe though it is more difficult to identify drug-caused incidents than alcohol-caused incidents, and the distinction between heavy users of drugs and incidental users of drugs is rarely made. The study by Cruze et al. put the cost of drug abuse at more than \$16 billion, including more than \$1 billion for treatment and support and more than \$3 billion in lost productivity.

Adolescence and young adulthood are periods of instability, new experiences (e.g., driving, alcohol use, employment, leaving home), and risk-taking. Alcohol and drug use are not only problem behaviors in and of themselves, but they also contribute to the severity of other (usually short-term) problem behaviors that are generally more prevalent among adolescents and young adults even in the absence of alcohol or drug use (Maisto & Guess, 1980). But problem behaviors are at least partly independent; and when substance use and problem consequences are associated, cause and effect relationships are not clear (Jessor & Jessor, 1977) because problem behaviors tend to occur together as a syndrome.

Further complicating the issue, is the fact that psychoactive substances used in combination operate synergistically, often producing at least short-term effects not predictable from the sum of effects of individual drugs (Cohen, 1981). This phenomenon, combined with the fact that users of any one

substance are much more likely to be users of multiple substances (O'Donnell, Voss, Clayton, Slatin, & Room, 1976) and with the fact that young adults, most of whom use alcohol, also are the heaviest users of other drugs, makes the attribution of the causes of adverse consequences to alcohol or a single drug a difficult task.

B. Drug and Alcohol Use in the Military

The military services are largely composed of the subsets of the general U.S. population in which drug and alcohol use are highest; young, unmarried males are most likely to be users and heavy users of both alcohol and drugs. General population studies (Fishburne et al., 1980; Miller et al., 1983) as well as studies specifically of adolescents (Johnston et al., 1982; Rachal, Williams, Brehm, Cavanaugh, Moore, & Eckerman, 1975; Rachal, Guess, Hubbard, Maisto, Cavanaugh, Waddell, & Benrud, 1980) have clearly identified the extent of alcohol and drug use within the population from which most recruits are drawn. It is not surprising, then, that military rates of drug and alcohol use parallel those for the general population (Polich, 1981) and are approximately equal to the rates for the civilian counterparts of the same demographic description. Already-initiated users, therefore, enter the military service (Callan & Patterson, 1973) even though there are attempts to screen out heavy users before induction. Based on the stability of usage and problems reported within the civilian pool, the prevalence of such use and the incidence of adverse consequences would be expected to persist among recruits.

1. Particular Problems for the Military

Demonstrating that substance use in the military is a reflection of the larger societal problems associated with drug and alcohol use serves to help understand the military problem. It also serves to weaken the hypothesis that factors unique to the military solely cause the problem. Given the military mission and its requirement for readiness, any reduction in manpower availability and performance because of substance use impairs the military forces' abilities to accomplish their missions in a timely manner; the level of impairment implied by civilian rates of drug and alcohol use and problems is unacceptable (Tullington, Strickland, & Griner, 1979; Tullington, Strickland, & Gaebel, 1980).

Alcohol and drug abuse affect military performance in a variety of ways including excessive sick time and reduced performance. The influence of drugs and/or alcohol used before going on duty or while on duty necessarily impairs

the individual's functioning. This could include the diminution of learning from instruction, poor personal interaction, or the slowing of reaction time and poor motor control affecting efficiency as well as the safety of the individual and others.

On a somewhat larger scale, the occurrence and tolerance of substance abuse affects the cohesion of small units. The open violation of rules of behavior undermines the good order and discipline of the group. On the largest scale, manpower levels, mission accomplishment, safety, security, discipline, and morale are affected by individuals whose alcohol and drug use is disruptive.

Finally, a problem of great importance is the possible perception of the American public (and others throughout the world) that the military has a disproportionately large number of drug using personnel (cf. Beary, Mazzuchi, & Richie, 1983). Even if this is not the case, concern still exists that personnel who handle expensive, sophisticated, and powerful planes, ships, weaponry, and other instruments, and who man delicate peace-keeping missions may be debilitated by or under the influence of drugs.

The worldwide dispersion of military personnel to isolated and, sometimes, hostile areas contributes to the seriousness of the drug and alcohol problem. Control over availability of psychoactive substances is complicated by the necessity of locating installations where drugs are readily available. The studies of Vietnam veterans (Robins, 1974; Robins, Helzer, & Davis, 1975) indicated that accessibility and the nature of the assignment contributed to use in Vietnam. In most cases, however, use patterns begun there did not persist after returning. Isolated duty stations, where recreational activities are limited, or stations with substandard living conditions, and loneliness, boredom, cultural shock, and high stress may result in higher drug and alcohol use. While such circumstances can be considered fairly peculiar to the military, they neither cause the problems associated with substance abuse nor do they make the effects more tolerable; rather, they argue for developing prevention and intervention strategies that take into account the military situation.

2. Recent Research on Drug and Alcohol Use in the Military

The Department of Defense has been concerned with the influence of drug and alcohol use on unit and individual performances since the late 1960s (Black, Owens, & Wolff, 1973; Cahalan & Cisin, 1975; Cahalan, Cisin, Gardner, & Smith, 1972; Greden, Frenkel, & Morgan, 1975) and has undertaken programs to

The field teams' major responsibilities included:

- . Coordinating the itinerary consistent with MLO recommendations;
- . Coordinating with the MLO at the installation regarding preparations;
- . Conducting scheduled survey sessions;
- . Training the MLO for phase II survey efforts;
- . Shipping completed survey forms to the scoring subcontractor; and
- . Reporting to RTI central staff on the completion status of the survey at each site.

All Phase I survey sessions were conducted by RTI field teams. Only individuals selected for the survey were permitted in the administration rooms during the sessions which generally took place during regular working hours. At each session participants names were checked against the personnel roster to ensure that only selected individuals took part. After all session participants were given a questionnaire and a pencil, a team member provided an introduction to the purpose of the survey. Instructions were given about anonymity of respondents, the voluntary nature of participation, and correct procedures for marking the questionnaire to facilitate machine scoring. After questions raised by participants were answered, the questionnaires were completed.

During the team visit to an installation efforts were made to survey all eligible individuals selected for the survey. Reasons were documented for all individuals who did not attend any session, and documented rosters were provided to RTI central staff.

Completed questionnaires were secured by the MLO during the stay of the field team. At the completion of the site visit, field teams inventoried completed instruments, reconciled the inventory with documented counts from the sample personnel lists of persons completing the survey, and packaged the instruments for shipment. Questionnaires were shipped directly to the scoring contractor for optical scan processing. All unused instruments were given to the MLO for use in subsequent survey administrations.

2. Phase II Data Collection

Despite strong efforts on the part of the MLO's and Field Teams, a substantial number of selected individuals did not complete a questionnaire during the team visit. Reasons for not taking the survey included illness, temporary duty assignments (TDY,TAD), permanent change of station assignments

- . They generated general officer support for the survey by sending a series of notification messages to appropriate command levels;
- . They communicated MLO names and pertinent mailing information to RTI project staff;
- . They monitored the production of computer generated sample personnel lists and forwarded them to MLOs;
- . They were involved (often on a day-to-day basis) in making contacts with MLOs regarding schedules, coordination and arrangements for the survey, and receipt of questionnaires;
- . They coordinated with RTI staff regarding survey scheduling and the status of preparations at the installations.

b. Military Liaison Officers Responsibilities

MLO's played a key role in the data collection effort. They generally exhibited a high level of effort and a strong commitment to the survey. Prior to the arrival of the field team, each MLO was responsible for the following activities:

- . storing the survey instruments,
- . receiving the sample personnel lists;
- . notifying all sample personnel of their selection for the survey,
- . coordinating and scheduling the survey sessions during the two day period planned for the field team visit.

During the RTI field team visit, the primary activities of the MLO were to monitor and ensure attendance of selected personnel at one of the sessions, and document the reasons for nonattendance.

c. RTI Responsibilities

RTI employed seven two-person teams to administer the worldwide survey. Three field teams were assigned to the Americas Region (CONUS), one to the North Pacific Region (Republic of Korea, mainland Japan, and Okinawa), one to the Other Pacific Region (Hawaii, the Phillippines, and Guam), and two to the Europe Region (West Germany, United Kingdom, Greece, Italy). Prior to data collection, field team leaders were trained in a two-day conference. HLOs, the DoD project officer, and RTI control staff provided training instructions. Each team leader subsequently trained his other team member.

Table 3.2. Selected Demographic Characteristics of Survey Respondents and All DoD Personnel

Characteristics	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
	Sample	Population	Sample	Population	Sample	Population	Sample	Population	Sample	Population
<u>Sex</u>										
Male	88.0	90.4	94.3	92.0	96.1	95.6	88.9	88.8	90.6	90.9
Female	12.0	9.6	5.7	8.0	3.9	4.4	11.1	11.1	9.4	9.1
<u>Race/Ethnicity</u>										
White	60.9	63.0	77.6	80.0	72.5	73.5	78.2	78.2	71.2	72.7
Black	24.6	29.3	10.6	11.4	14.5	19.6	12.8	14.8	16.7	19.7
Hispanic	9.1	4.0	5.5	2.9	9.1	4.5	4.8	3.6	6.9	3.6
Other	5.4	3.7	6.3	5.6	3.9	2.4	4.1	3.4	5.2	4.0
<u>Education</u>										
Less than high school	5.2	9.2	4.3	9.0	5.0	8.2	0.7	0.9	3.7	6.8
High School Grad/GED	51.1	67.8	56.3	70.3	58.0	77.3	33.6	64.6	48.2	68.4
Beyond HS, No Degree	30.1	10.0	29.2	9.4	27.4	5.7	42.5	15.5	33.1	11.0
College Degree or Beyond	13.6	13.0	10.2	11.3	9.7	8.8	23.2	19.0	15.0	13.8
<u>Age</u>										
17-20	23.3	20.9	31.0	21.1	30.8	32.4	12.3	15.6	23.0	20.6
21-24	31.6	30.1	29.5	31.2	39.6	35.1	27.6	27.7	30.6	30.2
25-30	25.2	24.8	19.6	26.3	18.3	18.9	25.5	24.8	23.2	23.9
31 or older	20.0	24.2	19.9	21.4	11.3	13.6	34.6	31.9	23.2	25.3
<u>Marital Status</u>										
Not married	49.6	47.4	59.0	54.1	57.1	60.7	36.4	38.0	49.1	47.8
Married	50.4	52.6	41.0	45.9	42.9	39.3	63.6	61.9	50.9	52.2
<u>Pay Grade</u>										
E1-E5	70.7	67.4	74.0	68.2	78.5	75.8	61.8	64.5	69.8	67.5
E6-E9	17.4	19.3	17.5	19.7	12.9	14.5	18.3	17.9	17.2	18.6
W1-W4	2.2	1.9	0.4	0.5	0.6	0.8	*	*	1.0	0.9
O1-O3	7.3	7.3	5.3	7.1	6.1	6.3	12.3	11.3	8.1	8.3
O4-O6	2.4	4.1	2.8	4.5	1.9	2.6	7.7	6.3	3.9	4.7
<u>Total Personnel</u>	33.6	36.7	28.9	26.3	10.9	9.3	26.5	27.6	-	-

Note: Tabled values are column percentages. Population data for all DoD personnel in December 1982 were provided by the Defense Manpower Data Center.

* Not applicable.

Demographic characteristics of the sample and total DoD appear in Table 3.2. As shown, the sample generally provides a good representation of the military on the characteristics that are displayed. Educational background of the sample varied most notably from that of the DoD population. The major discrepancy was that people in the sample indicated a somewhat higher level of educational training (particularly those beyond high school with no formal degree) than that reported by official DoD records of educational attainment. This difference is probably explained by the way the educational data are gathered. DoD asked for highest year of school completed. The survey asked respondents to indicate whether they had some college, but not a four year degree. Thus, survey respondents who attended college for one term but did not complete the year were counted in the survey as beyond high school, but by DoD as having a high school education.

A detailed description of the Sampling Design is presented in Appendix C.

D. Field Procedures

Detailed field procedures for collecting questionnaire data were formulated and applied throughout the four world regions. Coordination of survey activities among participating installations was achieved by the appointment of a Headquarters Liaison Officer (HLO) in Washington for each Service and a Military Liaison Officer (MLO) at each participating installation.

Data collection was conducted in two phases. During Phase I (September through November, 1982), MLOs were sent lists of personnel that had been selected to participate in the survey at their installations. MLOs planned and coordinated two-day, in-person visits by RTI field teams who administered questionnaires in group sessions.

Phase II data collection (September through January, 1983) consisted of MLOs obtaining completed survey questionnaires from personnel who did not attend any scheduled session during the on-site visit. They did this either by conducting additional group or individual sessions with personnel at their installation (using procedures that preserved the respondents anonymity) or by mailing questionnaires to individuals no longer present.

1. Phase I Data Collection

a. Headquarters Liaison Officer Responsibilities

Each HLO performed a variety of activities that contributed to a successful data collection effort.

Table 3.1. Allocation of the Sample

Region	Service	First Stage Sampling Units	First Stage Sample Size	Second Stage Sample Size
Americas	Army	98	7	3081
	Navy	78	6	3230
	Marine Corps	39	2	859
	Air Force	92	6	2711
	Total	307	21	9881
North Pacific	Army	19	4	1716
	Navy	3	2	1101
	Marine Corps	3	3	1245
	Air Force	5	3	1397
	Total	30	12	5459
Other Pacific	Army	4	2	789
	Navy	8	5	2568
	Marine Corps	3	2	821
	Air Force	3	2	909
	Total	18	11	5087
Europe	Army	92	9	4071
	Navy	6	2	1023
	Marine Corps ^a	0	0	63
	Air Force	22	3	1380
	Total	120	14	6537
Total Worldwide	Army	213	22	9657
	Navy	95	15	7922
	Marine Corps	45	7	2988
	Air Force	122	14	6397
	Total	475	58	26,964

^aMarine Corps personnel in Europe were classified into Navy first stage units.

- . Americas -- Alaska, Canada, Continental United States (CONUS), Greenland, Iceland, Antigua, Bermuda, Cuba, Diego Garcia, Panama, Puerto Rico
- . North Pacific -- Republic of Korea, mainland Japan, Okinawa
- . Other Pacific -- Australia, Canton Enderbury, Gilbert Ellice, Guam, Hawaii, Johnston Atoll, Midway, Pacific Trust, Philippines, Wake
- . Europe -- Belgium, Greece, Italy, Netherlands, Portugal, Spain, Turkey, United Kingdom, West Germany.

A total of fifteen first stage strata were defined (one for each service in each region except for Marines in Europe which were sampled in conjunction with the Navy in Europe). The first stage sample was selected with probability proportional to size and with minimum replacement (Chromy, 1979). Composite size measures were constructed to provide an equal probability selection of personnel within each pay grade grouping within each of the first stage strata.

Second stage sampling units were lines on the personnel rosters of the organizational units selected at the first stage of sampling. The second stage frame was stratified into five pay grade groups (E1-E5's, E6-E9's, W1-W4's, O1-O3's, and O4-O6's) within each first stage unit, except for the Air Force which does not have warrant officer grades. The second stage sample was selected with equal probability and without replacement from within second stage strata.

Table 3.1 shows the distribution of the first stage sampling units, and the first and second stage sample sizes. In total, 475 first stage sampling units were constructed and 58 first stage units were selected in the sample. The sample yielded a total of 26,964 persons of whom 25,844 were determined to be eligible to participate in the survey. Of these, at least partially completed questionnaire information was obtained from 21,936 persons. Installations selected for the sample were located in the following countries for each region.

- . Americas -- CONUS
- . North Pacific -- Republic of Korea, mainland Japan, Okinawa
- . Other Pacific -- Hawaii, Republic of the Philippines, Guam
- . Europe -- West Germany, Italy, Greece, United Kingdom

Inadequacy in the wording or formatting became apparent for several items from the item distributions and from informal debriefing of Pilot Study participants. Appropriate modifications were made for these items in the final version of the questionnaire.

Correlations were computed to investigate the relationships which occurred among selected items regarding one's work, reasons for or for not drinking, reasons for the use or nonuse of drugs, religiosity, and use of beer and marijuana. The patterns were encouraging in that relationships were in expected directions among theoretically similar items.

Overall, inspection of the item distributions, selected correlations, and informal debriefings with participants argued for little modification of the survey questionnaire. Minor changes were made to correct apparent problems of item formatting/wording and to enhance item clarity.

3. Supplementary Forms

The Contextual Factors Form and the Alcohol and Drug Program Checklist were tested by the Air Force and Marines to assess the burden associated with gathering the required data and the suitability of the forms. Both services found the burden of completing the forms to be reasonable and the requested data to be accessible. Some service specific formatting and item changes were made to the forms for use in the main study.

C. Sampling Design Overview

The goals of the sampling design and weighting procedures for the World-wide Survey were to create a demonstrably unbiased sample using appropriate rigorous statistical techniques. The sampling design that was used can be summarized as a deeply stratified, two stage design. First stage sampling units were constructed by combining Service level organizational units that were geographically proximal. These organizational units for the Services were:

- . Army--Army Location Code (ARLOC)
- . Navy--Unit Identification Code (UIC)
- . Marine Corps--Monitor Command Codes (MCC) and Reporting Unit Codes (RUC)
- . Air Force--Consolidated Base Personnel Office (CBPO)

The first stage sampling frame was stratified by Service (Army, Navy, Marine Corps, Air Force) within four broadly stratified geographic regions of the world. The geographic regions and the areas they encompassed were as follows:

- . Initial preparations for the survey
- . Identification of the sample of participants
- . Coordination of survey activities
- . Administration of the survey questionnaire.

Of course these broad tasks have many subtasks associated with them (e.g., selecting a sample includes obtaining a master roster of personnel in participating units, sorting the roster by appropriate pay-grade groupings, applying random numbers to identify the survey participants).

The first three broad tasks were to be completed by the MLO and the fourth task by the RTI field team in cooperation with the MLO. The specific tasks and the associated steps to be completed by the MLO were detailed in an MLO Manual. Similarly, the procedures followed by the RTI field teams were described in the RTI Field Team Manual.

Pilot testing of the procedures was valuable in showing their level of adequacy. In general, most of the procedures were found to be workable. The most notable problems that emerged from the Pilot Test concerned the selection of sample personnel and obtaining acceptable response rates. The first problem was solved in the main survey by the use of a centralized computer selection procedure that performed the personnel selection for the MLO and the second problem was corrected by soliciting high level command support for the survey through DoD and Service level channels.

2. Survey Questionnaire

Another purpose of the Pilot study was to examine three aspects of the questionnaire items:

- . the adequacy of item response alternatives;
- . the adequacy of item wording and item formatting;
- . expected relationships among items.

The first two aspects of the items were addressed by considering item distributions and the last aspect of the items is noted by considering some selected correlations among items.

Distributions of responses were examined for each item in the Survey Questionnaire. Inspection of these distributions suggests that, overall, the items were discriminating among respondents. That is, responses were generally distributed across the entire range of response alternatives according to conceptual and theoretical expectations. In addition, distributions on similar items seem to be roughly equivalent to those demonstrated in other comparable surveys (e.g., Burt & Biegel, 1980; Polich & Orvis, 1979).

Checklist. Both of these instruments were designed to provide additional information about treatment programs and the context of drug and alcohol use at the participating sample installations. These forms were designed to be completed by informed individuals at the installation, but not by the survey participants. The data from these instruments were intended to elucidate greater understanding and interpretation of data gathered with the basic survey instrument.

The Contextual Factors Form asked such items as the estimated price of drugs and drug trade around the installation, the number of Article 15's, court martials, or discharges attributable to alcohol or drug use, the number of DWIs reported at the base, the dollar value of alcohol sales, the number of drug positive urine samples, and the like. The Drug and Alcohol Program Checklist examined types of services provided, staffing patterns, types of instruction, public information activities, attitudes of program personnel, and other characteristics of the base programs.

Use of these forms was optional for the study, and left to the discretion of the services. The Marines and Air Force elected to use the supplementary instruments. Discussion of data from these forms is included in chapter 10.

B. Pilot Study

During May 1982 a Pilot Study was conducted at four military installations, one for each service, to examine the viability of the procedures and instruments. The Pilot Study was viewed as a scaled-down "dry run" of the total survey plan and was conducted to meet the following objectives:

- . Test the data collection procedures;
- . Pretest the Survey Questionnaire; and
- . Pretest the Supplementary Data Collection Forms.

A total of 401 respondents participated in the pilot study.

1. Field Procedures

In planning for the survey an effort was made to develop procedures that would be as general as possible across all services and yet be flexible enough to accommodate the special situations of any particular service. The procedures relied heavily on a Military Liaison Officer (MLO) at the participating installations who worked closely with RTI staff. Simply stated the basic tasks to be completed were:

3. METHODOLOGY OF THE 1982 WORLDWIDE SURVEY

The methodology of the 1982 Worldwide Survey consisted of a complex array of activities. The present chapter describes the procedures used to orchestrate the data collection among a representative sample of active duty military personnel. We begin with a description of the data collection instruments followed by a discussion of the pilot study. We then present the sampling design and describe its implementation for the survey. Data collection field procedures are discussed next and we conclude with a report of various performance rates for the study.

A. Data Collection Instruments

A key factor in developing information to meet the objectives of the Worldwide Survey is the nature and extent of the data that is collected. Two kinds of data collection instruments were utilized, a basic survey questionnaire and two supplementary data collection forms.

1. Survey Questionnaire

The primary data collection instrument was the survey questionnaire. Using the 1980 questionnaire as a foundation, a refined instrument was developed for the 1982 Worldwide Survey. The development of the questionnaire proceeded through a series of revisions based on input from staff at RTI, DoD, and each of the Services. The survey questionnaire, which used an optical scan format and was designed to be self administered, appears in Appendix A of this report.

Items in the questionnaire were developed to assess the previously described objectives of the Worldwide Survey. Questions can generally be arrayed into several broad areas. The most basic information concerns the use of nonmedical drugs and alcohol. Items assessing use of alcohol and drugs assess both quantity and frequency during a period of 30 days and 12 months. Consequences of use, along with measures of work impairment and dependence are included. Reports of attitudes and behaviors of theoretical and applied interest are asked. Reasons for and the context of use and nonuse are also obtained. Basic demographic indicators are included as are questions about alcohol and drug treatment.

2. Supplementary Forms

In addition to the Survey Questionnaire, two supplementary instruments were developed, a Contextual Factors Form and a Drug and Alcohol Program

Studies have not usually examined effects on work of particular drugs. Because marijuana is retained for long periods of time in the body and because its effects are subtle, admissions of using or being under the influence understate the actual incidence of on-duty effects. The analysis by Holcomb (1981/82) appears to confirm other findings of negative job effects of marijuana use by showing a higher prevalence of adverse effects, adverse promotional decisions, and adverse efficiency ratings for heavy cannabis users.

Amphetamines are legally manufactured though they have become more difficult to obtain because of doubts about their medical efficacy and because of their frequent abuse. Rather than being solely "recreational," it could be assumed that these drugs are taken in an effort to enhance working performance. Amphetamines and other "uppers" were the second most commonly used drug in the 1980 study. Thirteen percent used them in the previous 12 months; 6 percent used them in the previous 30 days. These figures were highest for the Navy, followed by the Marines, Army, and Air Force.

The extent to which such use affects military readiness can only be estimated. In the 1980 study, 21 percent of the E1-E5's said their work had been impaired by drug use in the previous 12 months. The highest percentages were in the Navy and Marines (28 percent each) followed by the Army (22 percent) and Air Force (9 percent). The U.S. House Appropriations Committee has estimated that the equivalent of four combat infantry battalions are lost to the European Command because of drug use and that alcohol and hangovers were involved in 15 to 20 percent of the Navy's major aircraft accidents in 1979 (Culhane, 1981).

The highest percentage was found for the Marines (11 percent) and the lowest, again, for the Air Force (4 percent). The Polich and Orvis report three years earlier had calculated a 4.6 percent dependency rate for the Air Force.

Several analyses have been conducted to compare the alcohol use of the military population with that of the general population (Holcomb, 1981/82; Polich, 1981), and only small differences have been found. A reasonable question, then, would be whether or not the military should be held to higher or more stringent standards than are demonstrated in the general population, especially given that it has been difficult to quantifiably measure how and how much alcohol use impairs military readiness.

b. Other Drug Use. Most "other drug" use in the military is cannabis--marijuana primarily, though hashish is available at many overseas bases. In 1979, three-quarters of all young adult males reported experience with marijuana, and 45 percent reported use in the past month (Fishburne et al., 1980). This figure is much higher than the 1980 survey percentage for E1's to E5's who used the drug in the last 30 days, 37 percent (26 percent for all personnel). For both 12-month and 30-day periods, the Navy and the Marine Corps showed the highest prevalence of marijuana use and the Air Force the lowest.

Marijuana is "different" than alcohol because its very possession is illegal. It is different, too, because its effects are not as obvious as those of alcohol and its physical effects can persist for as long as a week. Marijuana interferes with memory and various intellectual tasks in addition to numerous physical functions such as depth perception. Because the effects of marijuana are long-term and cumulative, chronic, frequent use is probably incapacitating. In the 1980 survey (Burt & Biegel, 1980), 5 percent of the respondents said they had used it every day in the previous 30 days. Another 5 percent said they used it at least 5 days a week. These reports are highest for the Marines (15 percent), followed by the Navy (14 percent), Army (11 percent), and Air Force (5 percent). The 1980 figures for E1's to E5's who are chronic marijuana users are, again, higher than for the military population as a whole, but they appear to be lower than the figures for Army and Navy E1-E5's in Europe reported in the Task Force report (16.1 percent and 24.4 percent, respectively) (Task Force, 1981, p. 11).

During the analysis of data from the 1980 Worldwide Survey, eight drinks, although a rather high figure, was chosen as the threshold of heavy daily drinking.

Worldwide, comparison by pay grade group of heavy drinking during the past 12 months showed that heavy drinking was rarely reported by officers and warrant officers. Twenty-eight percent of E1s to E5s and about 10 percent of E6s to E9s reported heavy drinking of beer at least weekly; weekly or more frequent heavy drinking of wine was reported by 8 percent of the junior and approximately 1 percent of the senior enlisted personnel. Fourteen percent of the E1s to E5s and about 5 percent of the E6s to E9s reported heavy drinking of hard liquor at least weekly. (Holcomb, 1981/82, p.6)

But does drinking affect job performance? In the Air Force study, respondents were asked to report on adverse consequences of drinking--including physical damage, social disruption, and work impairment (Polich, 1981). Official disciplinary action was reported by 1.9 percent; lower performance ratings by 1.4 percent; and loss of 3 or more working days by 4.2 percent. The Burt & Biegel report (1980) showed much higher percentages of impairment in the preceding year for the four services. "Lowered performance" was reported most commonly (from 34 percent in the Navy to 19 percent in the Air Force; average 22 percent), followed by "late for work or left early" (from 21 percent in the Navy to 12 percent in the Air Force; average 13 percent), "drunk/high while working" (from 21 percent in the Navy to 7 percent in the Air Force; average 11 percent), and "did not come to work" (from 8 percent in the Army to 2 percent in the Air Force; average 5 percent). An unduplicated count shows that 27 percent of respondents reported suffering at least one consequence (Holcomb, 1981/82). The Task Force on Drugs in the Military found even higher prevalence in on-duty drinking on the European bases it covered: Army (28 percent), Navy (21 percent), Marine Corps (19 percent), and Air Force (16 percent).

Because over half those in the armed services are under 25 years of age, physiological dependency would not appear likely to be widespread. The 1980 survey attempted to measure this dependence by asking about physical symptoms of alcohol dependency. Using these data, the author categorized

....7 percent of all military personnel... as alcohol dependent during the 12 months preceding the survey and that alcohol dependency occurred most often among junior (10 percent) and senior enlisted personnel (3 percent). Alcohol dependency was rare among warrant officers and commissioned officers (1 percent or less for each group). (Holcomb, 1981/82, p.8)

deal with the problem. Such programs have included intense detection efforts (e.g., urinalyses, inspections of living quarters, "drug dogs," inspection of mail, use of informants and undercover agents), prevention efforts, and treatment opportunities. As part of this effort, the Services as well as the Office of the Secretary of Defense conducted surveys of substance use during the 1970s [e.g., the Rand Corporation Study in 1977 for the U.S. Air Force (Polich & Orvis, 1979), and the 1980 Worldwide Survey of alcohol and drug use in the military conducted by Burt Associates Inc. (Burt & Biegel, 1980)]. The most extensive source of estimates of substance abuse across all Services now available is the Burt and Biegel (1980) survey. Secondary analyses of these data have yielded additional commentary and information (Beary et al., 1983; Holcomb, 1981/82; Polich, 1981).

Together, such studies provide enough recent and consistent evidence to support contentions that substance abuse affects a significant portion of the military and to allow rough descriptions of the gross subgroups (e.g., E1's through E5's) who most actively use and are affected adversely by drugs and alcohol.

a. Alcohol Use. Alcohol is part of a long tradition in the military. As in civilian life, alcohol has been incorporated into military life to hail good fortune and bad fortune, to alleviate fear, depression, and boredom, and to commemorate important events. In the past, the Service is where many young men "learned" to drink. Officially condoned and relatively cheap, alcohol is the drug most commonly used in the military. In 1980, 83 percent reported using alcohol in the past 30 days. Among 18-25 year olds, the percentage was 84 percent, two percent above a standardized civilian population drawn from the 1979 NIDA general population survey (Holcomb, 1981/82, p.11). Alcohol is the drug most commonly used among all personnel, especially senior enlisted and officers.

Use per se, of course, is not generally a problem. However, excessive use at any one time, use in inappropriate circumstances (such as while on duty), and chronic heavy use will pose problems for both the individual and the military. "Problem drinking is more prevalent among males between 18 and 25 years of age and is most often linked to acute episodes of intoxication rather than being symptomatic of an underlying chronic disorder" (Polich, 1981).

(PCS), deployed status, and the like. In order to combat a nonresponse bias problem in the survey a second phase of data collection was undertaken. The goal of this effort was to obtain a completed questionnaire from all individuals who did not participate during the field team site visit except those who were absent without leave (AWOL), deceased, separated, unknown, or known refusals.

a. Headquarters Liaison Officer Responsibilities

Phase II data collection was assumed as the primary responsibility of the military. Thus the HLO was responsible to coordinate with the MLOs in his Service to insure that all phase II activities were completed. His role consisted of sending messages to the field describing the phase II effort, and following up with MLOs to ensure that all tasks were completed.

b. Military Liaison Officer Responsibilities

The MLO assumed the major responsibility for phase II data collection. This effort took two forms: on base sessions and mailed questionnaires.

Using documentation of reasons for nonattendance, the MLO scheduled and conducted additional survey sessions for persons who were no-shows (persons who were present for duty locally, but who did not attend any session), and for persons who became available after returning from official leave, TDY/TAD, hospitalization or deployment.

The MLO implemented procedures for mailing survey instruments to all other persons. Persons who received questionnaires by mail in turn mailed them directly to the scoring contractor and returned a postcard to the MLOs as an indication of completion of the questionnaire. Persons who received a mailing included PCS and long-term TDY/TAD, or deployed persons.

Although the MLO coordinated some group sessions, precautions were taken to ensure anonymity of respondents. The MLO convened the session by providing a page of written instructions explaining the study and an envelope to secure the completed questionnaire. MLOs were instructed not to remain in the room during the sessions. At the conclusion of phase II activities, MLOs shipped the questionnaires in the sealed envelopes to the scoring contractor.

Phase II data collection activities began with the departure of the RTI field team and ended when all local persons were surveyed who could be and all mailings had been completed.

c. RTI Responsibilities

RTI staff conducted two types of activities as part of phase II data collection: training the MLOs and monitoring phase II questionnaire receipt and final document receipt. The field teams provided training to MLOs during the site visit that included written instructions about their tasks and detailed explanations of how to complete each task. In addition all necessary forms, questionnaires and other materials were provided. Where possible, field teams made followup telephone contact with MLO's to answer questions and monitor progress.

Throughout the data collection period RTI project staff monitored the return to the scoring contractor of questionnaires completed during Phase II data collection. In addition, there was coordination with the HLO to ensure the return to RTI of a fully documented sample personnel list from each MLO. These lists provided information on the disposition of every sample individual and were used to make final project statistical calculations.

E. Survey Performance Rates

Response rate information is of interest in surveys both as an aid for assessing the quality of survey field operations and for assessing the non-response bias potential that may exist in the data. In a generic sense the term, response rate, can be applied to several different performance rates, each important from a survey operational perspective or from a statistical perspective. In the simplest of cases, the response rate is the ratio of,

- (a) the number of individuals in the population of inferential interest for whom information was obtained,
- (b) divided by the total number of individuals in the population of inferential interest who were slated for the collection of information

The definition becomes more complicated however, under a number of circumstances. For example, when the population surveyed and the population of inferential interest are not the same or when only partial information is obtained for the population units in the sample, the simple definition above appears to need qualification. The qualification results in the possibility of computing various kinds of performance rates, each signifying useful but somewhat different information about the survey.

Table 3.3 presents five performance rates of interest along with the corresponding response data used to compute them: Eligibility Rate, Availability Rate, Completion Rate, Response Rate for Eligibles and Overall Response Rate. Each of these is briefly described.

The term, Eligibility Rate, can be used to denote the rate at which individuals identified as eligible when the sample was drawn were still eligible to take part in the survey several weeks later during data collection. Some of those selected were not eligible because they were no longer in the service, were AWOL, were deceased, or were unknown. The eligibility rate can be an important determinant of statistical efficiency in that sampling variances can increase if eligibility rates are low. If there is a failure to determine the eligibility status of every case, some potential for missing data biases is introduced. As shown in Table 3.3, the overall Eligibility Rate was approximately 96 percent.

The term, Availability Rate, can be used to denote the rate at which identified eligible persons were available for attendance at group sessions. For various reasons, including temporary duty assignment, change of station, deployment and illness, some sample individuals were not available for phase I questionnaire administrations conducted by the field teams. The availability rate is an important operational consideration, largely determining the facilities needed for the group sessions, data collection schedules and other factors. Failure to collect information for the unavailable individuals adds another component to the total missing data or nonresponse bias potential. Overall, the availability rate during phase I data collection was only 68 percent. This rate suggests the possibility for considerable nonresponse bias and the need for phase II data collection.

The Completion Rate denotes the rate at which completed questionnaires were obtained from identified eligible individuals. Operationally, the completion rate is important to the determination of data processing costs and schedules. Statistically, the missing data, again contribute to the potential for biases.

The Completion Rate of 97 percent for phase I data collection indicates the level of success that the field teams had in obtaining questionnaires from eligible personnel who were available to be tested when the field teams were at the installations. This rate provides the most comparable calculation to the "response rate" reported in the 1980 Worldwide Survey (Burt &

Table 3.3 Survey Response Data and Performance Rates

Item	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
<u>Response Data</u>					
1. Persons selected for survey (total sample)	9,657	7,922	2,988	6,397	26,964
2. Number of eligible persons identified ^a	9,182	7,483	2,889	6,290	25,844
3. Eligibles available to participate during Phase 1 data collection sessions	6,746	4,230	2,023	4,571	17,570
4. Questionnaires obtained from Phase 1 data collection	6,360	4,152	1,971	4,509	16,992
5. Questionnaires obtained from Phase 2 data collection	1,056	2,213	426	1,320	5,015
6. Questionnaires containing usable information ^b	7,380	6,349	2,389	5,818	21,936
7. Persons with unknown eligibility, unusable questionnaire data, or no questionnaire data ^c	1,932	1,313	505	475	4,225
<u>Performance Rates</u>					
8. Eligibility Rate ^d (%) = Item 2/Item 1	95.1	94.5	96.7	98.3	95.8
9. Availability Rate ^e (%) = Item 3/Item 2	73.5	56.5	70.0	72.7	68.0
10. Completion Rate ^f (%) = Item 4/Item 3	94.3	98.2	97.4	98.6	96.7
11. Response Rate among Eligibles ^g (%) = Item 6/Item 2	80.4	84.8	82.7	92.5	84.9
12. Overall Response Rate ^h (%) = (Item 1 - Item 7)/Item 1	80.0	83.4	83.1	92.6	84.3

^aExcludes 1,120 individuals from the total sample who were separated (748), deceased (4), AWOL (51) or unknown (317).

^bTotal questionnaires obtained during phase 1 and phase 2 data collection minus those excluded with unusable information. Overall 71 questionnaires were excluded.

^cOverall this includes 3,837 eligibles who did not participate, 317 unknowns and 71 participants who gave unusable information.

^dThe rate at which individuals identified as eligible when the sample was drawn were still eligible to take part in the survey several weeks later during data collection (i.e., they were not separated, deceased, AWOL, or unknown).

^eThe rate at which identified eligible persons were available for group sessions during phase 1 data collection.

^fThe rate at which questionnaires were obtained from eligible persons available during phase 1 data collection. This rate is comparable to the "response rate" reported in the 1980 Worldwide survey by Burt & Biegel (1980, Appendix F) as follows: Army = 91%, Navy = 95%, Marine Corps = 91%, Air Force = 96%, Total DoD = 93%.

^gThe rate at which usable questionnaires were obtained from persons identified as eligibles.

^hThe rate at which complete information necessary to compute a parameter estimate has been obtained from the total sample. This rate, which has a statistical emphasis, specifies that when the product of three elements of information are known (as distinguished from being positive), the individual is considered a respondent. The critical information elements are eligibility of the selected individual (yes, no, unknown), specified membership in a domain of interest (yes, no, unknown), and usable questionnaire responses (yes, no). For the current survey, respondents consist of all individuals returning a usable questionnaire plus those identified as separated, deceased or AWOL. The latter three groups are included since they provide all the information required for computation of parameter estimates.

Biegel, 1980, Appendix F). As shown in the footnote of Table 3.3, the rates for the present survey were somewhat improved for all Services over those shown in 1980.

For the last two response rate calculations, at least two schools of thought can be identified, one with an operational emphasis (Response Rate among Eligibles) and the other with a statistical emphasis (Overall Response Rate).

The Response Rate among Eligibles is computed as the ratio of persons providing a usable questionnaire to the total number of eligible persons identified. Ineligible populations units (i.e., separated, deceased, AWOL, or unknown) are excluded from the response rate calculation, an argument that can be defended from an operational perspective. This rate overall for DoD was approximately 85 percent with the Air Force showing the highest rate among the Services.

The Overall Response Rate follows a statistical perspective. To compute this rate, a responding population unit is defined as one for which all of the information needed to compute a parameter estimate has been collected. For example, an estimated population total for a specified domain of eligibles can be written as,

$$\hat{T}_{c,d} = \sum_{g \in s} \frac{Y(g) \delta_e(g) \delta_d(g)}{\pi(g)},$$

where,

c denotes the specific total of interest,

d denotes the specific domain (or subpopulation) of interest, (e.g., E1-E5s)

g $\in$ s denotes a population unit selected into the sample,

$Y(g) = 1$, if a useable questionnaire was obtained for the g-th population unit,

$= 0$, otherwise,

$\delta_e(g) = 1$, if the g-th population unit is eligible,

$= 0$, otherwise,

$\delta_d(g) = 1$, if the g-th population unit belongs to the specified domain,

$= 0$, otherwise, and,

$\pi(g)$ = the expected frequency with which the g-th population unit appears in samples of the size selected.

In the statistical sense, the g-th unit is a nonresponding unit if insufficient information is supplied to be able to compute the product, $Y_c(g)\delta_e(g)\delta_d(g)$ (i.e., there is no missing information for the three values). Hence, the Overall Response Rate is the ratio in the sample of the number of population units supplying all of the information needed to compute the parameter estimate to the total number of population units in the surveyed population. By this definition, persons who provide a questionnaire along with those who are separated, deceased, or AWOL provided sufficient information to make the parameter estimate and were thus included in the numerator of the ratio.

The Overall Response Rate shown in Table 3.3 was 84 percent and met the DoD objective of 80 percent. Among the Services the Air Force achieved the highest Overall Response Rate.

It is of interest to note that there is very little difference in the results of the Response Rate among Eligibles and the Overall Response Rate. If there is no difference between the surveyed population and the population of inferential interest, that is, if

$$\delta_e(g) = 1, \quad \text{all } g \in s,$$

then the two calculations are the same. If the two populations are to some degree different, the Response Rate Among Eligibles by definition, cannot reflect nonresponse to the eligibility criteria. Under extreme circumstances the Response Rate Among Eligibles can become mathematically undefined.

F. Sample Participants

The previous section on Response Rates presented the total number of respondents to the survey for each Service and Total DoD. Table 3.4 displays the distribution of survey respondents across the stratification variables of Service, Region, and Pay Grade. Overall, the Army has the largest number of respondents (7380) followed by the Navy (6349), Air Force (5818) and Marines (2389). Across the regions, the Marines, as the smallest service, have the fewest numbers of participants. In the Americas Region the Navy (2467) and Air Force (2453) show similar numbers with the Army sample (2122) nearly as

Table 3.4. Distribution of 1982 Worldwide Survey Respondents

Region/Pay Grade	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
Americas					
E1-E5	1363	1826	472	1487	5148
E6-E9	437	464	83	434	1418
W1-W4	57	11	2	*	70
01-03	202	105	41	330	678
04-06	63	61	10	202	336
Total	2122	2467	608	2453	7650
North Pacific					
E1-E5	998	666	749	923	3336
E6-E9	271	192	165	244	872
W1-W4	31	6	5	*	42
01-03	92	59	48	76	275
04-06	36	37	19	41	133
Total	1428	960	986	1284	4658
Other Pacific					
E1-E5	392	1280	627	527	2826
E6-E9	133	551	72	192	948
W1-W4	12	11	1	*	24
01-03	22	116	33	78	249
04-06	32	101	7	65	205
Total	591	2059	740	862	4252
Europe					
E1-E5	2459	477	36	829	3801
E6-E9	564	230	8	251	1053
W1-W4	31	6	1	*	38
01-03	151	55	5	88	299
04-06	34	95	5	51	185
Total	3239	863	55	1219	5376
Total Worldwide					
E1-E5	5212	4249	1884	3766	15111
E6-E9	1405	1437	328	1121	4291
W1-W4	131	34	9	*	174
01-03	467	335	127	572	1501
04-06	165	294	41	359	859
Total	7380	6349	2389	5818	21936

Note: Table entries are numbers of respondents who completed a usable questionnaire.

*Not applicable.

large. In the North Pacific the Army (1428) and Air Force (1284) have the largest representation with the Navy (960) and Marines (986) being about the same. The Navy (2059) has the largest number of respondents in the Other Pacific Region with the other three services being roughly comparable. In Europe the Army (3239) dominates the sample respondents with the Air Force (1219) having the next largest representation. These regional differences in sample size reflect the proportional representation of each of the Services in the regions.

The paygrade differences show the largest number of participants being the E1-E5's, followed by E6-E9's, O1-O3's, O4-O6's, and W1-W4's. This pattern holds through all services and regions in accordance with the sampling design.

A large number of tables in subsequent chapters of the report present data in the form or some slight variation of the pattern shown in Table 3.4. Because of the large number of different sample n's, it is not feasible to present them in the individual tables of the analyses. It will be necessary to refer to this table to determine the sample sizes used.

4. PREVALENCE OF ALCOHOL USE

Military personnel in the four Services around the world are frequent consumers of beer, wine, and hard liquor. Judging by the frequency and quantity of use of alcohol, substantial segments of military personnel drink more often than just on weekends and consume more than just one or two drinks on a typical day. Analyses presented in this chapter provide estimates of the prevalence of alcohol use and the frequency and quantity of that use during the past 30 days and the past 12 months. Data are presented for the use of beer, wine, and hard liquor separately, and for "primary beverage," defined as the beverage an individual used most often. Alcohol use by all military personnel and by the four Services is presented by geographic regions of the world and by pay grades. Finally, users of different amounts of alcohol are described in terms of their socio-demographic characteristics.

Most of the tables in this chapter and in the following chapters present two numbers in each cell. The first number is an estimate of the percentage of the population with the characteristics that define the cell. The second number, in parentheses, is the standard error of the estimate. Standard errors represent the degree of variation associated with taking observations on a sample rather than on every member of the population.

Confidence intervals, or ranges that are very likely to include the true population value, can be constructed using the standard errors. The 95 percent confidence interval is computed by adding to and subtracting from the estimated proportion the result of multiplying 1.96 times the standard error for that cell. (Obviously, for very small or very large estimates, the respective smallest or largest value in the confidence interval range will be zero or 100 percent.) The interpretation of the confidence interval range is that, if the study were to be repeated with 100 identically-drawn samples, 95 of the sample estimates would fall within the confidence interval range; thus, we are 95 percent certain that the true population value also lies within that range. Clearly, for a given confidence level (e.g., 95 percent), smaller standard errors indicate that the cell proportions estimate the true population value more precisely, and larger standard errors indicate that the true population value is estimated less precisely. In tables where standard errors do not appear, a reasonable rule-of-thumb is that the sampling error associated with

any point estimate is equal to or slightly larger than the standard error presented with an equal-sized estimated proportion in table cells defined by similar characteristics (i.e., service, paygrade, etc.). Appendix B contains additional information about standard errors and their use.

A. Definition and Measures of Alcohol Use

1. Definition of Alcohol Use

The military personnel who were respondents in this survey were asked to indicate their levels of past and current use of three alcoholic beverages--beer, wine, and hard liquor. For each alcoholic beverage respondents were asked to report for the past 30 days: 1) the number of days they drank that beverage, 2) the size of the usual drink, and 3) the number of drinks consumed on a typical day when they drank the beverage. For each alcoholic beverage they were also asked to report for the past 12 months the number of days per week or month they typically drank 8 or more drinks of each type beverage in a single day.

From these items, measures of alcohol use were constructed that included frequency and quantity of beverage, use including the primary beverage; a quantity/frequency index of average daily ounces of ethanol; and a typology of drinking levels.

2. Beverage-Specific Frequency and Quantity of Use

Measures of the prevalence of use of beer, wine, and hard liquor during the past 30 days were developed from questions concerning frequency of use of those beverages. These same frequency questions were also used to define "primary" beverage, the beverage used most often. In addition, a measure of "frequent drinkers," defined as those who drank 11 or more days within the past 30 days, was also constructed. The quantity of beer, wine, and hard liquor consumed on a typical drinking day was used to construct a measure of "heavy drinkers" who consumed eight or more drinks on a typical drinking day. Finally, the frequency of consuming eight or more drinks of beer, wine, or hard liquor on atypical drinking days during the past 12 months was investigated.

3. Average Daily Ethanol Consumption

An index was constructed following the method developed by Polich and Orvis (1979) that combined the quantity and frequency of alcohol use to determine the average daily ounces of ethanol consumed. The ethanol index was computed as a function of the amount of ethanol contained in the ounces of

beer, wine, and hard liquor consumed on a typical drinking day during the past 30 days, the frequency of use of each beverage, and the amount of ethanol consumed on atypical ("heavy") drinking days during the past 12 months. The index represents average daily ounces of ethanol consumed during a 12 month period. Although the index represents 12 month use, the data draw most heavily on reports of 30 day typical use, and similar use for other months of the year is assumed. The construction of the index is described in more detail in Appendix H.

4. Drinking Level Typology

Another measure that combines information on quantity and frequency of alcohol use is the drinking level typology adapted from Rachal et al. (1975, 1976, 1980). For the typology, 10 drinking categories are first defined based on information about the beverage for which the most alcohol was consumed during the past 30 days. The 10 categories describe whether the individual abstained, drank once a month, 3-4 times a month, or at least once a week and whether small, medium, or large amounts of alcohol were drunk during a typical drinking occasion. The resulting drinking categories and definitions are presented in Table 4.1.

The second step in forming the typology was to combine the 10 categories into five drinking levels: abstainers, infrequent-light, moderate, moderate-heavy, and heavy drinkers. The five drinking levels and the original categories on which they are based are presented in Table 4.2.

5. Heavy Drinkers

Definitions of heavy drinking must take into account information about both frequency and quantity of consumption. Three approaches were described above (beverage specific, ethanol consumption, drinking levels) that combine quantity and frequency data somewhat differently. Consequently, three somewhat different definitions of "heavy drinkers" resulted.

The first measure based on beverage specific information defines heavy drinkers as those consuming 8 or more drinks per typical drinking day on 11 or more of the past 30 days. The second measure of average daily ethanol consumption defines heavy drinkers as those consuming 5 or more ounces/day. This definition was used in the 1980 Worldwide survey (Burt and Biegel, 1980) and in the Rand Air Force study (Polich and Orvis, 1979), although it is viewed as very restrictive. The third measure of drinking levels defines heavy drinkers

Table 4.1. Drinking Categories Based on Quantity-Frequency of Drinking

Drinking Category	Definition
0	Abstainer*
1	Those who drink <u>once a month</u> at most and <u>small**</u> amounts per typical drinking occasion.
2	Those who drink <u>once a month</u> at most and <u>medium</u> amounts per typical drinking occasion.
3	Those who drink <u>once a month</u> at most and <u>large</u> amounts per typical drinking occasion.
4	Those who drink <u>3-4 times a month</u> and <u>small</u> amounts per typical drinking occasion
5	Those who drink <u>3-4 times a month</u> and <u>medium</u> amounts per typical drinking occasion
6	Those who drink <u>3-4 times a month</u> and <u>large</u> amounts per typical drinking occasion
7	Those who drink <u>at least once a week</u> and <u>small</u> amounts per typical drinking occasion
8	Those who drink <u>at least once a week</u> and <u>medium</u> amounts per typical drinking occasion
9	Those who drink <u>at least once a week</u> and <u>large</u> amounts per typical drinking occasion

* Those who drink only once a year or less are classified as abstainers since the absolute alcohol per day consumed is (essentially) "0".

** Small (light), medium (moderate), and large (heavy) amounts are defined in terms of ounces of ethanol in Rachal, et al. (1975, 1976) and refer to one or less beer or drink or glass of wine per drinking occasion, 2-4 beers, etc., per drinking occasion, and 5 or more beers, etc., per drinking occasion, respectively.

Table 4.2. Specification of Drinking Levels from Drinking Categories

Drinking Categories of Table 4.1	Drinking Level Groups	Definition
0	Abstainers	Doesn't drink or drinks once a year or less.
1,2,4	Infrequent- Light	Drinks once a month at most and small or medium amounts per typical drinking occasion, <u>or</u> drinks no more than 3-4 times a month and small amounts per typical drinking occasion.
3,5,7	Moderate	Drinks at least once a week and small amounts per typical drinking occasion, <u>or</u> 3-4 times a month and medium amounts per typical drinking occasion, <u>or</u> no more than once a month and large amounts per typical drinking occasion.
6,8	Moderate- Heavy	Drinks at least once a week and medium amounts per typical drinking occasion, <u>or</u> 3-4 times a month and large amounts per typical drinking occasion.
9	Heavy	Drinks at least once a week and large amounts per typical drinking occasion.

as those who drink at least once a week and 5 or more drinks per typical drinking occasion (Table 4.2).

Clearly, differences in these definitions will potentially affect the classification of individuals as heavy drinkers. Examination of the resulting classifications indicates similarities for the first and third measures, both of which exceed the second measure. More specifically, percentages of heavy drinkers for each measure are as follows:

- . Beverage specific--beer, 13 percent; primary beverage, 16 percent;
- . Ethanol--7 percent; and
- . Drinking level--14 percent.

Most of the analyses throughout the report rely on the drinking level definition of heavy drinking.

B. Alcohol Use During the Past 30 Days

Analyses presented in this section describe the prevalence, frequency, and quantity of alcohol use during the past 30 days. In most tables, estimates are presented for beer, wine, and hard liquor, and for use of the "primary beverage," that is, the beverage most frequently used. Comparisons of levels of use are made across the four Services, regions, and pay grades.

1. Frequency of Consumption

Across the four Services and all pay grades, more military personnel drank beer (77 percent) than drank wine (38 percent) or hard liquor (53 percent) during the past 30 days (see Table 4.3). Overall, 84 percent drank their "primary beverage" sometime during the past 30 days. Use of beer is most common in the Marine Corps and Army; use of wine is most common in the Air Force; and use of hard liquor is most common in the Navy. Use of primary beverage is most prevalent in the Army and Air Force.

For all alcoholic beverages, military personnel in pay grades 04-06 were most likely to drink: 81 percent drank beer compared with 69 to 78 percent of other pay grades; 80 percent drank wine compared with 31 to 63 percent of others; 69 percent drank hard liquor compared with 47 to 57 percent of others; and 91 percent drank their "primary beverage" compared with 83 to 90 percent of others.

Table 4.4 shows "primary" beverage" use during the past 30 days for the four world regions. The level of use is high overall and shows little variation across regions. Across all Services and pay grades prevalence is highest

Table 4.13. Frequency of Consuming Eight or More Cans, Bottles or Glasses of Beer in a Single Day During the Past 12 Months

Pay Grade/Frequency	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
E1-E5					
5-7 days a week	7.9 (0.7)	7.0 (0.6)	4.8 (0.2)	2.1 (0.2)	5.9 (0.3)
3-4 days a week	8.7 (0.8)	12.6 (0.7)	10.2 (1.4)	5.0 (0.3)	9.1 (0.4)
1-2 days a week	11.6 (0.5)	15.7 (0.6)	13.7 (0.4)	8.2 (0.5)	12.1 (0.3)
1-3 days a month	15.3 (0.8)	16.3 (0.6)	16.6 (0.3)	15.8 (1.1)	15.9 (0.4)
Less than monthly	21.5 (0.7)	21.7 (0.4)	23.9 (0.8)	22.1 (1.0)	22.0 (0.4)
Never	34.9 (2.1)	26.5 (0.9)	30.9 (0.9)	46.7 (1.3)	35.1 (0.9)
E6-E9					
5-7 days a week	2.1 (0.5)	1.9 (0.5)	3.5 (0.9)	1.3 (0.6)	1.9 (0.3)
3-4 days a week	3.3 (0.7)	2.2 (0.5)	0.4 (0.2)	1.7 (0.4)	2.3 (0.3)
1-2 days a week	6.4 (0.8)	5.7 (0.7)	4.7 (2.7)	5.6 (0.7)	5.9 (0.5)
1-3 days a month	11.2 (0.9)	15.9 (0.4)	9.7 (2.5)	8.1 (0.9)	11.5 (0.5)
Less than monthly	24.2 (1.5)	22.7 (2.2)	30.1 (0.8)	22.3 (2.1)	23.6 (1.0)
Never	52.9 (1.7)	51.7 (2.3)	51.5 (5.9)	61.0 (2.6)	54.9 (1.2)
O1-O3					
5-7 days a week	1.1 (0.6)	0.9 (0.9)	0.2 (0.3)	- (-)	0.6 (0.3)
3-4 days a week	0.6 (0.3)	1.1 (0.7)	0.0 (**)	0.3 (0.3)	0.5 (0.2)
1-2 days a week	3.8 (1.0)	3.3 (1.3)	2.4 (1.0)	2.0 (0.6)	2.8 (0.5)
1-3 days a month	10.1 (2.8)	12.6 (4.1)	10.4 (1.5)	6.0 (1.4)	8.8 (1.5)
Less than monthly	24.3 (3.2)	22.2 (3.8)	37.6 (3.6)	20.0 (2.7)	23.0 (1.8)
Never	60.1 (5.5)	59.9 (6.5)	49.3 (4.1)	71.7 (3.4)	64.3 (3.0)
O4-O6					
5-7 days a week	2.4 (2.3)	0.0 (**)	0.0 (**)	0.1 (0.1)	0.6 (0.5)
3-4 days a week	0.0 (**)	1.1 (0.9)	0.0 (**)	0.0 (**)	0.2 (0.2)
1-2 days a week	4.1 (1.6)	0.3 (0.2)	0.0 (**)	0.9 (0.5)	1.4 (0.5)
1-3 days a month	3.9 (1.7)	5.7 (3.4)	2.7 (2.0)	1.0 (0.6)	2.6 (0.9)
Less than monthly	16.5 (2.9)	25.1 (8.3)	23.6 (12.0)	16.2 (1.9)	18.3 (2.1)
Never	73.1 (2.8)	67.8 (7.8)	73.8 (12.9)	81.9 (2.1)	76.9 (2.3)
Total					
5-7 days a week	6.1 (0.6)	5.6 (0.6)	4.3 (0.2)	1.6 (0.2)	4.5 (0.3)
3-4 days a week	6.8 (0.7)	9.8 (0.8)	8.1 (0.7)	3.4 (0.3)	6.8 (0.3)
1-2 days a week	9.7 (0.4)	12.8 (0.3)	11.5 (0.3)	6.4 (0.6)	9.8 (0.2)
1-3 days a month	13.8 (0.8)	15.8 (0.6)	15.0 (0.2)	12.0 (0.9)	13.9 (0.4)
Less than monthly	22.1 (0.8)	22.1 (0.7)	25.6 (0.5)	21.5 (1.3)	22.2 (0.5)
Never	41.5 (1.7)	33.9 (1.6)	35.6 (0.5)	55.1 (2.6)	42.7 (1.1)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Totals include W1-W4's.

- Estimate rounds to zero.

**Informative standard error not available.

Table 4.12. Heavy Drinkers of Hard Liquor on a Typical Drinking Day During the Past 30 Days

Region/Pay Grade	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
Americas					
E1-E5	6.6 (1.2)	11.3 (0.4)	7.2 (0.4)	3.9 (0.6)	7.6 (0.4)
E6-E9	2.5 (0.6)	5.6 (1.7)	2.4 (0.1)	0.9 (0.5)	3.0 (0.6)
W1-06	0.6 (0.3)	0.9 (0.5)	0.0 (**)	0.2 (0.2)	0.4 (0.2)
Total	5.1 (0.9)	9.5 (0.6)	5.9 (0.1)	2.5 (0.5)	5.8 (0.3)
North Pacific					
E1-E5	11.9 (2.7)	12.2 (1.1)	12.6 (2.5)	9.1 (1.7)	11.4 (1.2)
E6-E9	7.1 (2.0)	5.2 (2.1)	4.4 (0.9)	5.3 (0.9)	5.7 (0.8)
W1-06	5.2 (2.1)	1.0 (1.0)	5.7 (1.6)	1.7 (0.7)	3.6 (0.8)
Total	10.3 (2.6)	9.6 (1.3)	10.9 (2.3)	7.7 (1.1)	9.6 (1.1)
Other Pacific					
E1-E5	10.1 (1.3)	8.1 (1.8)	17.2 (1.6)	5.7 (1.1)	9.6 (0.9)
E6-E9	4.9 (2.4)	2.8 (0.5)	1.5 (1.2)	5.7 (1.5)	4.0 (0.7)
W1-06	1.8 (1.0)	0.4 (0.5)	2.2 (1.7)	0.7 (0.5)	1.0 (0.4)
Total	7.6 (2.1)	6.0 (1.3)	14.8 (1.7)	4.8 (0.5)	7.3 (0.7)
Europe					
E1-E5	12.3 (0.8)	6.5 (1.1)	5.4 (2.7)	3.8 (1.1)	10.1 (0.6)
E6-E9	5.2 (0.7)	1.7 (0.8)	0.0 (**)	2.4 (0.2)	4.2 (0.5)
W1-06	1.5 (1.2)	1.3 (1.6)	0.0 (**)	0.0 (**)	1.0 (0.7)
Total	10.4 (0.6)	4.3 (1.5)	3.6 (2.2)	3.0 (0.8)	8.2 (0.5)
Total Worldwide					
E1-E5	8.8 (0.8)	11.1 (0.4)	8.5 (0.5)	4.2 (0.5)	8.3 (0.3)
E6-E9	3.5 (0.5)	5.2 (1.5)	2.6 (0.1)	1.6 (0.4)	3.4 (0.5)
W1-06	1.0 (0.3)	0.8 (0.4)	0.7 (0.3)	0.2 (0.2)	0.6 (0.2)
Total	6.9 (0.6)	9.2 (0.5)	7.1 (0.3)	2.9 (0.4)	6.4 (0.3)
Worldwide, All Grades, Primary Beverage^a	17.0 (1.5)	20.6 (1.8)	20.2 (0.6)	8.5 (1.0)	15.8 (0.8)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. "Heavy Drinker" is defined as having 8 or more drinks of hard liquor on a typical

^a"Primary Beverage" represents the beverage (beer, wine, hard liquor) that respondents reported using most often.

**Informative standard error not available.

-Estimate rounds to zero.

Table 4.11. Heavy Drinkers of Beer on a Typical Drinking Day During the Past 30 Days

Region/Pay Grade	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
Americas						
E1-E5	15.7 (2.6)	20.6 (2.0)	21.3 (0.1)	9.0 (1.0)		16.3 (1.1)
E6-E9	5.1 (0.9)	6.2 (1.3)	2.4 (0.1)	4.6 (0.7)		5.1 (0.5)
W1-06	3.0 (0.9)	2.7 (1.4)	0.0 (**)	0.7 (0.3)		1.7 (0.4)
Total	12.1 (2.0)	16.7 (1.9)	17.0 (1.1)	6.4 (0.9)		12.3 (0.9)
North Pacific						
E1-E5	19.8 (2.7)	24.1 (0.6)	20.9 (2.7)	11.1 (0.5)		18.4 (1.2)
E6-E9	8.2 (3.9)	15.1 (0.5)	9.0 (2.4)	7.1 (1.2)		9.2 (1.5)
W1-06	2.2 (1.0)	1.1 (1.1)	3.1 (1.4)	1.8 (0.8)		2.1 (0.5)
Total	15.7 (3.4)	19.8 (0.2)	17.8 (2.1)	9.4 (0.7)		15.1 (1.2)
Other Pacific						
E1-E5	18.2 (3.7)	17.4 (3.1)	30.8 (1.6)	10.4 (2.5)		18.5 (1.5)
E6-E9	6.3 (7.5)	9.2 (1.3)	8.8 (4.5)	4.2 (1.8)		7.2 (2.0)
W1-06	1.1 (1.6)	1.4 (0.8)	8.5 (1.7)	1.3 (0.9)		1.7 (0.6)
Total	12.7 (6.1)	13.6 (1.8)	27.3 (0.9)	7.5 (2.5)		13.9 (1.6)
Europe						
E1-E5	18.6 (1.4)	10.9 (4.1)	11.1 (-)	6.7 (0.5)		15.6 (1.0)
E6-E9	4.1 (1.1)	3.9 (1.2)	3.6 (7.0)	2.0 (0.3)		3.5 (0.7)
W1-06	1.9 (0.8)	0.6 (0.4)	0.0 (**)	0.0 (**)		1.1 (0.5)
Total	15.0 (1.1)	7.2 (3.1)	8.0 (1.7)	4.9 (0.5)		12.2 (0.8)
Total Worldwide						
E1-E5	16.9 (1.7)	20.3 (1.8)	21.8 (0.4)	8.8 (0.8)		16.3 (0.8)
E6-E9	5.0 (0.7)	6.6 (1.1)	3.7 (0.6)	4.3 (0.5)		5.2 (0.4)
W1-06	2.7 (0.7)	2.4 (1.2)	0.7 (0.3)	0.7 (0.2)		1.7 (0.3)
Total	13.1 (1.4)	16.4 (1.7)	17.6 (0.9)	6.4 (0.7)		12.5 (0.7)
Worldwide, All Grades, Primary Beverage^a	17.0 (1.5)	20.6 (1.8)	20.2 (0.6)	8.5 (1.0)		15.8 (0.8)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. "Heavy Drinker" is defined as having 8 or more beers on a typical drinking day during the past 30 days.

** Informative standard error not available.

-Estimate rounds to zero.

^a"Primary Beverage" represents the beverage (beer, wine, hard liquor) that respondents reported using most often.

the Services, the Navy, Army, and Marine Corps (7 to 9 percent) have more heavy drinkers than Air Force (3 percent).

The prevalence of heavy drinking of beer and hard liquor is investigated in Tables 4.11 and 4.12. "Heavy drinkers" are defined as those who consumed 8 or more drinks on a typical drinking day during the past 30 days. Overall, 13 percent of DoD military personnel worldwide can be classed as heavy drinkers of beer. They are far more likely to be E1-E5's (16 percent) than in other pay grades (5 percent of E6-E9 personnel and 2 percent of W1-06 personnel, see Table 4.11). Heavy drinking is somewhat more prevalent among personnel stationed in the North Pacific (15 percent) than in other regions (12 to 14 percent). Among the Services, it is much more likely among Marine Corps (22 percent) and Navy personnel (20 percent) than among Army personnel (17 percent) or Air Force personnel (9 percent).

Worldwide, 6 percent of DoD military personnel can be classified as heavy drinkers of hard liquor (see Table 4.12). Such heavy drinking is far more prevalent among E1-E5's (8 percent) than among other pay grades (1-3 percent). Heavy drinking of hard liquor is somewhat more prevalent in the North Pacific (10 percent) compared with Europe (8 percent), the Other Pacific (7 percent) and the Americas (6 percent). It is also more prevalent in the Navy (9 percent) than in the Army and Marine Corps (each 7 percent) or the Air Force (3 percent).

C. Frequency of Heavy Drinking

The frequency with which military personnel engage in heavy use of beer, wine, and hard liquor is presented in Tables 4.13 to 4.15. Figures are presented for the number of days per month or week that military personnel report they drank eight or more drinks of the respective beverages in a single day during the past 12 months. These data present a first approximation of the prevalence of problem drinking in the military, since they combine measures of quantity and frequency. For instance, those who drink 8 or more drinks 5-7 days a week are likely to experience problems with work performance; even those who engage in heavy drinking 3-4 days a week are at risk of developing work problems because they are not confining their use to the off-duty days.

Overall, 11 percent of DoD personnel drink beer heavily 3 or more days a week, 10 percent 1-2 days a week, 14 percent 1-3 days a month, and 22 percent less than monthly; 43 percent never drink beer that heavily (Table 4.13). Heavy beer drinking 3 or more days a week is most likely among E1-E5 personnel (15 percent compared to 4 percent or less for other pay grades) and among Navy

Table 4.10. Quantity of Hard Liquor Consumed on a Typical Drinking Day During the Past 30 Days

Pay Grade/ Number of Drinks	Service									
	Army		Navy		Marine Corps		Air Force		Total DoD	
E1-E5										
None	46.4	(2.2)	44.0	(2.8)	47.2	(1.2)	48.2	(1.9)	46.3	(1.2)
1 Drink	7.9	(0.8)	7.2	(0.7)	9.5	(0.9)	8.7	(0.7)	8.0	(0.4)
2-3 Drinks	20.5	(1.2)	19.0	(1.2)	17.4	(0.8)	22.6	(1.3)	20.3	(0.6)
4-7 Drinks	16.4	(0.7)	18.7	(1.3)	17.4	(1.3)	16.2	(1.5)	17.1	(0.6)
8-11 Drinks	5.4	(0.6)	7.3	(0.2)	5.4	(0.4)	2.9	(0.4)	5.3	(0.2)
12 or more	3.4	(0.4)	3.8	(0.4)	3.1	(0.2)	1.3	(0.2)	3.0	(0.2)
E6-E9										
None	53.0	(1.7)	52.3	(1.4)	66.0	(3.8)	51.7	(2.6)	53.3	(1.1)
1 Drink	7.9	(0.9)	7.4	(0.5)	6.3	(1.1)	9.1	(0.6)	8.0	(0.4)
2-3 Drinks	23.6	(1.5)	22.3	(1.9)	18.4	(3.3)	25.1	(2.4)	23.3	(1.1)
4-7 Drinks	12.0	(1.4)	12.8	(1.8)	6.7	(1.8)	12.4	(1.6)	12.0	(0.8)
8-11 Drinks	2.5	(0.5)	4.4	(1.6)	2.4	(0.2)	1.4	(0.4)	2.7	(0.5)
12 or more	1.1	(0.3)	0.8	(0.2)	0.2	(0.2)	0.2	(0.1)	0.7	(0.1)
W1-W4 ^a										
None	54.0	(8.6)	47.7	(15.3)	+	(+)	*	(*)	53.0	(7.6)
1 Drink	7.0	(1.4)	19.0	(12.5)	+	(+)	*	(*)	10.0	(2.9)
2-3 Drinks	31.1	(7.1)	20.2	(11.1)	+	(+)	*	(*)	28.8	(6.7)
4-7 Drinks	6.1	(2.4)	12.1	(10.2)	+	(+)	*	(*)	6.5	(2.2)
8-11 Drinks	1.6	(1.4)	1.0	(1.0)	+	(+)	*	(*)	1.6	(1.2)
12 or more	0.1	(0.2)	0.0	(**)	+	(+)	*	(*)	0.1	(0.1)
01-03										
None	43.4	(3.6)	41.6	(5.4)	50.5	(1.1)	41.4	(1.9)	42.7	(1.7)
1 Drink	21.2	(2.8)	17.4	(2.7)	13.5	(5.4)	22.5	(1.8)	20.6	(1.5)
2-3 Drinks	28.2	(2.3)	30.8	(5.2)	27.4	(1.5)	29.2	(1.7)	29.0	(1.4)
4-7 Drinks	6.3	(1.0)	9.0	(0.9)	7.8	(4.4)	6.8	(1.8)	7.1	(0.9)
8-11 Drinks	0.6	(0.3)	1.1	(0.7)	0.8	(0.3)	0.1	(-)	0.5	(0.2)
12 or more	0.3	(0.4)	0.2	(0.3)	0.0	(**)	0.0	(**)	0.2	(0.1)
04-06										
None	39.1	(6.7)	29.8	(5.1)	42.4	(23.0)	28.0	(1.9)	31.4	(2.3)
1 Drink	19.1	(3.5)	22.0	(6.2)	14.8	(3.5)	27.5	(2.7)	24.0	(2.3)
2-3 Drinks	32.8	(5.4)	36.3	(2.8)	42.3	(20.4)	38.9	(3.1)	37.2	(2.4)
4-7 Drinks	8.7	(4.6)	11.9	(5.1)	0.5	(0.5)	5.1	(2.9)	7.0	(2.3)
8-11 Drinks	0.0	(**)	0.0	(**)	0.0	(**)	0.4	(0.4)	0.2	(0.2)
12 or more	0.3	(0.3)	0.0	(**)	0.0	(**)	0.1	(0.1)	0.1	(0.1)
Total										
None	47.3	(1.8)	45.0	(2.2)	49.7	(0.6)	46.5	(1.2)	46.7	(0.9)
1 Drink	9.1	(0.5)	8.2	(0.5)	9.6	(1.3)	11.9	(1.4)	9.7	(0.5)
2-3 Drinks	22.1	(1.2)	20.7	(1.3)	18.6	(1.8)	25.1	(1.3)	22.3	(0.7)
4-7 Drinks	14.5	(0.5)	16.9	(1.0)	15.0	(1.0)	13.5	(1.4)	14.9	(0.5)
8-11 Drinks	4.3	(0.5)	6.2	(0.2)	4.6	(0.2)	2.1	(0.3)	4.2	(0.2)
12 or more	2.6	(0.3)	3.0	(0.3)	2.5	(0.1)	0.9	(0.1)	2.2	(0.1)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

^aEstimates of use for Navy warrant officers are accompanied by rather large standard errors indicating the data have low reliability and should be interpreted with caution.

-Estimate rounds to zero.

*Not applicable.

** Informative standard error not available.

+Fewer than 20 respondents.

Table 4.9. Quantity of Wine Consumed on a Typical Drinking Day During the Past 30 Days

Pay Grade/ Number of Drinks ^a	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
E1-E5										
None	61.9	(2.5)	71.7	(3.3)	68.2	(2.4)	60.5	(1.5)	65.0	(1.5)
1 Drink	8.7	(0.7)	6.2	(0.9)	6.3	(1.7)	9.2	(0.5)	7.9	(0.5)
2-3 Drinks	18.6	(1.6)	14.7	(2.1)	15.1	(0.3)	21.8	(0.9)	17.9	(0.9)
4-7 Drinks	7.7	(0.6)	5.5	(0.8)	8.0	(1.3)	7.1	(0.5)	7.0	(0.4)
8-11 Drinks	1.3	(0.2)	0.8	(0.2)	1.3	(0.1)	0.6	(0.2)	1.0	(0.1)
12 or more	1.6	(0.2)	1.1	(0.2)	1.2	(0.4)	0.9	(0.3)	1.3	(0.1)
E6-E9										
None	69.6	(3.9)	73.4	(1.3)	71.6	(2.0)	63.9	(2.4)	69.1	(1.7)
1 Drink	7.9	(1.0)	8.9	(0.6)	10.4	(1.3)	12.8	(1.7)	9.8	(0.7)
2-3 Drinks	17.9	(2.8)	13.6	(1.0)	15.9	(4.3)	18.9	(1.3)	16.9	(1.2)
4-7 Drinks	3.7	(0.4)	3.4	(0.6)	1.9	(1.0)	3.3	(0.5)	3.4	(0.3)
8-11 Drinks	0.4	(0.2)	0.2	(0.2)	0.0	(**)	0.8	(0.4)	0.5	(0.2)
12 or more	0.6	(0.3)	0.5	(0.3)	0.2	(0.1)	0.2	(0.2)	0.5	(0.2)
W1-W4 ^b										
None	59.2	(5.6)	59.6	(21.5)	+	(+)	*	(*)	61.0	(5.0)
1 Drink	16.7	(2.9)	16.9	(10.8)	+	(+)	*	(*)	15.8	(2.6)
2-3 Drinks	21.6	(3.4)	21.4	(10.8)	+	(+)	*	(*)	20.8	(3.1)
4-7 Drinks	2.5	(1.4)	2.2	(1.7)	+	(+)	*	(*)	2.3	(1.2)
8-11 Drinks	0.0	(**)	0.0	(**)	+	(+)	*	(*)	0.0	(**)
12 or more	0.0	(**)	0.0	(**)	+	(+)	*	(*)	0.0	(**)
01-03										
None	41.4	(3.7)	32.4	(5.5)	49.2	(6.0)	32.8	(2.9)	36.7	(2.1)
1 Drink	16.6	(1.7)	26.1	(1.4)	9.5	(2.8)	21.9	(2.1)	20.1	(1.2)
2-3 Drinks	36.9	(3.1)	32.3	(3.0)	29.1	(1.9)	41.6	(2.3)	37.5	(1.5)
4-7 Drinks	4.9	(1.3)	8.1	(2.8)	12.3	(4.8)	3.8	(1.3)	5.5	(0.9)
8-11 Drinks	0.1	(0.1)	1.1	(0.7)	0.0	(**)	0.0	(**)	0.2	(0.2)
12 or more	0.1	(0.1)	0.0	(**)	0.0	(**)	0.0	(**)	0.0	(**)
04-06										
None	21.5	(2.4)	16.0	(6.3)	14.7	(8.8)	21.6	(1.6)	20.2	(1.5)
1 Drink	29.3	(3.0)	14.9	(5.8)	18.9	(17.0)	19.6	(2.4)	20.8	(2.0)
2-3 Drinks	43.6	(3.8)	63.8	(4.9)	62.2	(9.5)	56.2	(2.6)	55.1	(1.9)
4-7 Drinks	3.9	(1.8)	5.3	(1.9)	4.2	(3.0)	2.6	(0.8)	3.5	(0.7)
8-11 Drinks	1.7	(1.2)	0.0	(**)	0.0	(**)	0.0	(**)	0.4	(0.3)
12 or more	0.0	(**)	0.0	(**)	0.0	(**)	0.1	(0.1)	0.0	(**)
Total										
None	60.7	(2.7)	68.3	(3.0)	66.6	(2.4)	54.7	(1.6)	61.6	(1.4)
1 Drink	9.8	(0.7)	8.0	(0.9)	7.2	(0.8)	12.2	(0.9)	9.8	(0.4)
2-3 Drinks	20.5	(2.0)	16.8	(1.9)	16.9	(1.4)	26.3	(1.0)	20.8	(0.9)
4-7 Drinks	6.6	(0.5)	5.3	(0.7)	7.3	(0.6)	5.6	(0.5)	6.0	(0.3)
8-11 Drinks	1.1	(0.1)	0.7	(0.2)	1.0	(0.1)	0.5	(0.1)	0.8	(0.1)
12 or more	1.3	(0.1)	0.9	(0.2)	1.0	(0.3)	0.6	(0.2)	1.0	(0.1)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Totals include W1-W4's.

^aA drink is defined as one glass of wine.

^bEstimates of use for Navy warrant officers are accompanied by rather large standard errors indicating the data have low reliability and should be interpreted with caution.

*Not applicable.

** Informative standard error not available.

+Fewer than 20 respondents.

Table 4.8. Quantity of Beer Consumed on a Typical Drinking Day During the Past 30 Days

Pay Grade/Number of Drinks ^a	Service									
	Army		Navy		Marine Corps		Air Force		Total DoD	
E1-E5										
None	19.2	(1.4)	25.8	(3.6)	19.5	(1.2)	24.4	(1.1)	22.4	(1.2)
1 Drink	9.0	(0.8)	4.9	(0.5)	6.2	(0.3)	10.3	(0.7)	7.9	(0.4)
2-3 Drinks	29.3	(0.7)	22.6	(1.2)	23.7	(0.7)	31.5	(0.8)	27.4	(0.5)
4-7 Drinks	25.7	(1.0)	26.4	(1.2)	28.8	(0.8)	25.0	(0.9)	26.0	(0.6)
8-11 Drinks	9.5	(0.9)	11.4	(0.9)	13.3	(0.8)	5.6	(0.5)	9.5	(0.4)
12 or more	7.3	(1.0)	8.9	(1.1)	8.5	(0.9)	3.2	(0.4)	6.9	(0.5)
E6-E9										
None	24.3	(1.8)	26.5	(1.8)	24.8	(1.7)	25.7	(2.4)	25.4	(1.1)
1 Drink	13.2	(1.4)	11.5	(0.8)	6.7	(3.0)	14.8	(1.4)	12.8	(0.7)
2-3 Drinks	37.5	(1.3)	31.6	(1.8)	36.4	(0.6)	37.1	(1.3)	35.7	(0.8)
4-7 Drinks	20.0	(0.8)	23.8	(0.8)	28.3	(5.0)	18.2	(2.1)	21.0	(0.8)
8-11 Drinks	3.5	(0.5)	4.5	(0.7)	3.3	(0.5)	3.1	(0.5)	3.6	(0.3)
12 or more	1.5	(0.5)	2.1	(0.7)	0.5	(0.2)	1.2	(0.5)	1.5	(0.3)
W1-W4 ^b										
None	33.4	(4.2)	25.5	(18.0)	+	(+)	*	(*)	30.9	(3.9)
1 Drink	14.2	(3.9)	3.1	(2.2)	+	(+)	*	(*)	12.5	(3.2)
2-3 Drinks	35.2	(4.0)	32.8	(20.5)	+	(+)	*	(*)	35.8	(4.4)
4-7 Drinks	16.7	(3.0)	37.7	(24.9)	+	(+)	*	(*)	20.1	(4.4)
8-11 Drinks	0.5	(0.3)	0.0	(**)	+	(+)	*	(*)	0.6	(0.3)
12 or more	0.0	(**)	1.0	(1.0)	+	(+)	*	(*)	0.1	(0.1)
01-03										
None	20.3	(1.9)	26.8	(7.3)	17.2	(1.8)	21.8	(1.3)	21.9	(1.5)
1 Drink	20.8	(2.4)	13.3	(2.5)	9.3	(3.9)	25.9	(2.6)	20.9	(1.4)
2-3 Drinks	41.9	(3.0)	39.2	(5.9)	56.2	(2.5)	42.4	(1.6)	42.6	(1.6)
4-7 Drinks	13.9	(3.3)	17.0	(3.2)	16.6	(2.8)	9.1	(1.2)	12.6	(1.5)
8-11 Drinks	2.4	(1.0)	2.8	(1.3)	0.3	(0.1)	0.8	(0.4)	1.7	(0.4)
12 or more	0.8	(0.4)	0.9	(0.7)	0.4	(0.3)	0.0	(**)	0.4	(0.2)
04-06										
None	21.1	(4.5)	13.4	(3.4)	9.3	(4.2)	20.8	(2.5)	19.0	(1.7)
1 Drink	25.0	(1.9)	22.6	(4.1)	17.8	(8.4)	27.6	(4.3)	25.6	(2.7)
2-3 Drinks	41.9	(6.8)	57.4	(4.4)	64.1	(16.0)	46.7	(3.3)	48.4	(2.5)
4-7 Drinks	8.4	(2.6)	6.5	(1.7)	8.8	(4.2)	4.5	(1.5)	5.9	(1.1)
8-11 Drinks	3.3	(1.6)	0.0	(**)	0.0	(**)	0.4	(0.4)	0.9	(0.4)
12 or more	0.3	(0.3)	0.1	(0.1)	0.0	(**)	0.1	(0.1)	0.1	(0.1)
Total										
None	20.5	(0.8)	25.7	(3.0)	19.7	(1.0)	24.0	(0.6)	22.8	(0.9)
1 Drink	11.1	(0.6)	7.0	(0.6)	6.7	(0.2)	14.4	(1.1)	10.5	(0.4)
2-3 Drinks	32.1	(0.7)	26.0	(1.4)	28.3	(1.0)	35.0	(0.6)	30.9	(0.5)
4-7 Drinks	23.2	(0.8)	24.9	(1.1)	27.7	(1.0)	20.2	(1.1)	23.2	(0.5)
8-11 Drinks	7.6	(0.7)	9.4	(0.8)	10.9	(0.2)	4.1	(0.5)	7.4	(0.4)
12 or more	5.5	(0.7)	7.0	(1.0)	6.7	(1.1)	2.2	(0.3)	5.1	(0.4)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

^aA drink is defined as one beer.

^bEstimates of use for Navy warrant officers are accompanied by rather large standard errors indicating the data have low reliability and should be interpreted with caution.

*Not applicable.

** Informative standard error not available.

+Fewer than 20 respondents.

beer, as seen in Table 4.7. The worldwide level of frequent use of hard liquor is 6 percent compared to 23 percent for beer. Across all Services and pay grades, frequent drinking of hard liquor is most likely in the North Pacific and Europe (8 percent). There is little variation among the Services in the percentages of frequent drinkers of hard liquor. Worldwide, frequent drinkers of hard liquor are slightly more likely to be Warrants or Commissioned Officers (7 percent compared to 5 percent).

2. Quantity of Consumption

This section provides a basic look at the quantity of alcohol consumed during a typical drinking day. Two measures are presented: the number of drinks of beer, wine, or hard liquor that are typically consumed and the prevalence of "heavy drinkers" of beer and hard liquor.

The modal category for drinking beer among DoD military personnel is 2-3 drinks on a typical drinking day (31 percent). This is also the modal category for all branches of the service and pay grades (see Table 4.8). Among "heavy drinkers" who consume 8 or more drinks on a typical drinking day, E1-E5 personnel are by far the heaviest drinkers of beer (16 percent compared with 1 to 5 percent of other pay grades). Heavy drinkers of beer are more likely to be in the Marine Corps (18 percent). Abstainers from beer are most likely to be E6-E9's and to be in the Navy or Air Force.

Having 2-3 drinks on a typical drinking day is also the modal category for consumption of wine (21 percent), but the overall level of abstaining is high (62 percent), and few military personnel could be classified as being heavy drinkers of wine (Table 4.9). Prevalence of abstaining is particularly high for enlisted personnel (65 to 69 percent), lower for O1-O3's (37 percent), and lowest for senior officers (20 percent). Abstaining from use of wine is higher in the Army, Navy, and Marine Corps (61 to 68 percent) than the Air Force (55 percent). Thus, O4-O6 personnel and Air Force personnel are more likely than others to drink wine.

When military personnel drink hard liquor, they are most likely to consume 2-3 drinks on a typical drinking day (22 percent). However, the prevalence of abstaining is high (47 percent), as was observed for wine (see Table 4.10). Abstention from use of hard liquor is least likely for O4-O6 personnel (31 percent) compared with other pay grades (43 to 53 percent). Heavy drinking, 8 or more drinks on a typical drinking day, is far more prevalent among E1-E5 personnel (8 percent) than among other pay grades (3 percent or less). For

Table 4.7. Frequent Drinkers of Hard Liquor During the Past 30 Days

Region/Pay Grade	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
Americas										
E1-E5	2.9	(0.4)	7.2	(1.5)	3.6	(1.5)	3.7	(0.7)	4.7	(0.6)
E6-E9	4.2	(1.1)	2.7	(0.8)	2.4	(2.5)	5.5	(1.4)	4.0	(0.6)
W1-06	5.1	(1.2)	4.3	(1.5)	5.0	(2.9)	8.4	(1.3)	6.5	(0.8)
Total	3.5	(0.3)	6.2	(1.2)	3.6	(1.2)	5.0	(0.6)	4.8	(0.4)
North Pacific										
E1-E5	9.4	(1.3)	5.7	(1.2)	8.6	(1.9)	8.3	(1.3)	8.3	(0.8)
E6-E9	11.4	(1.1)	3.1	(2.1)	6.1	(1.4)	9.5	(2.9)	8.4	(1.0)
W1-06	8.1	(2.8)	1.8	(0.1)	4.6	(4.1)	9.1	(4.4)	6.6	(1.8)
Total	9.6	(1.0)	4.8	(1.3)	7.9	(1.1)	8.6	(1.6)	8.2	(0.6)
Other Pacific										
E1-E5	5.7	(1.6)	8.1	(1.4)	8.1	(2.6)	7.2	(2.8)	7.4	(1.0)
E6-E9	3.9	(0.6)	4.2	(0.7)	1.5	(1.2)	6.2	(0.9)	4.5	(0.5)
W1-06	3.6	(1.9)	10.1	(1.8)	2.7	(2.0)	10.3	(2.6)	8.0	(1.2)
Total	4.9	(1.2)	7.5	(0.6)	7.1	(2.1)	7.5	(0.9)	6.9	(0.5)
Europe										
E1-E5	9.1	(0.6)	8.4	(1.1)	8.3	(1.3)	5.6	(1.2)	8.3	(0.5)
E6-E9	6.6	(1.1)	9.1	(0.2)	13.8	(1.0)	9.2	(0.1)	7.6	(0.7)
W1-06	6.3	(1.7)	13.5	(1.3)	0.9	(1.6)	9.2	(0.5)	7.9	(1.1)
Total	8.5	(0.5)	9.6	(0.1)	7.8	(1.0)	6.8	(0.6)	8.1	(0.4)
Total Worldwide										
E1-E5	5.3	(0.4)	7.3	(1.3)	4.6	(1.2)	4.3	(0.6)	5.5	(0.4)
E6-E9	5.2	(0.8)	3.1	(0.7)	3.1	(2.0)	6.3	(1.1)	4.8	(0.5)
W1-06	5.4	(1.0)	5.3	(1.2)	4.7	(2.5)	8.5	(1.2)	6.7	(0.7)
Total	5.3	(0.2)	6.4	(1.1)	4.4	(0.9)	5.5	(0.5)	5.6	(0.3)
Worldwide, All Grades, Primary Beverage^a										
	29.1	(0.9)	25.6	(3.0)	27.3	(0.6)	24.5	(1.1)	26.7	(0.9)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Frequent drinkers are defined as those who consumed hard liquor on 11 or more of the past 30 days.

^a"Primary Beverage" represents the beverage (beer, wine, hard liquor) that respondents reported using most often.

Table 4.6. Frequent Drinkers of Beer During the Past 30 Days

Region/Pay Grade	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
Americas										
E1-E5	24.3	(2.2)	24.5	(3.4)	25.5	(0.6)	20.4	(1.8)	23.5	(1.4)
E6-E9	18.0	(1.8)	15.5	(2.0)	25.3	(2.7)	15.7	(1.9)	17.0	(1.1)
W1-06	20.6	(3.2)	16.8	(4.5)	22.9	(9.6)	16.2	(2.3)	18.1	(1.8)
Total	22.7	(1.3)	22.4	(2.9)	25.3	(0.1)	18.7	(1.1)	21.7	(1.0)
North Pacific										
E1-E5	34.4	(2.8)	16.1	(0.8)	26.3	(2.3)	24.4	(2.7)	26.9	(1.4)
E6-E9	25.8	(4.2)	14.6	(1.0)	18.9	(1.2)	24.5	(4.8)	22.1	(2.0)
W1-06	18.8	(2.1)	11.7	(4.4)	20.8	(1.5)	23.4	(1.9)	19.1	(1.3)
Total	31.0	(3.0)	15.3	(0.8)	24.7	(2.1)	24.3	(2.9)	25.2	(1.4)
Other Pacific										
E1-E5	30.3	(2.1)	30.5	(3.8)	30.1	(5.2)	24.7	(1.5)	29.1	(1.9)
E6-E9	19.0	(3.6)	22.7	(1.0)	30.5	(0.6)	21.3	(1.7)	22.1	(1.1)
W1-06	18.8	(1.1)	22.5	(1.8)	16.7	(6.6)	16.7	(1.0)	19.4	(0.8)
Total	25.9	(3.4)	27.8	(2.6)	29.3	(5.0)	22.6	(0.9)	26.4	(1.5)
Europe										
E1-E5	37.2	(1.5)	24.8	(1.3)	28.1	(8.0)	24.5	(2.2)	33.8	(1.2)
E6-E9	22.2	(1.8)	21.8	(2.3)	31.2	(5.0)	23.4	(1.7)	22.6	(1.3)
W1-06	26.3	(3.5)	15.5	(2.1)	42.8	(7.3)	21.6	(1.8)	24.0	(2.1)
Total	34.0	(1.4)	22.3	(1.1)	31.2	(6.4)	23.9	(1.4)	31.0	(1.1)
Total Worldwide										
E1-E5	29.0	(1.5)	24.6	(3.1)	26.0	(0.7)	21.4	(1.4)	25.6	(1.1)
E6-E9	19.6	(1.3)	16.2	(1.8)	24.7	(2.2)	17.6	(1.5)	18.4	(0.8)
W1-06	21.5	(2.5)	17.1	(3.7)	22.9	(7.9)	16.8	(2.1)	18.8	(1.5)
Total	26.5	(0.9)	22.5	(2.6)	25.5	(0.5)	19.8	(0.9)	23.4	(0.8)
Worldwide, All Grades, Primary Beverage ^a	29.1	(0.9)	25.6	(3.0)	27.3	(0.6)	24.5	(1.1)	26.7	(0.9)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Frequent drinkers are defined as those who consumed beer on 11 or more of the past 30 days.

^a"Primary Beverage" represents the beverage (beer, wine, hard liquor) that respondents reported using most often.

Table 4.5. Frequency of Use of Primary Beverage During the Past 30 Days

Pay Grade/Days of Use	Service								Total DoD
	Army		Navy		Marine Corps		Air Force		
E1-E5									
None	13.3	(0.8)	20.4	(3.8)	17.4	(1.3)	15.3	(1.3)	16.2 (1.2)
1-3 days	31.3	(1.5)	29.0	(1.3)	26.2	(1.4)	32.6	(0.8)	30.5 (0.7)
4-10 days	24.2	(0.9)	23.1	(1.2)	28.8	(0.5)	27.8	(0.7)	25.2 (0.5)
11-19 days	16.2	(0.7)	14.2	(1.6)	17.1	(1.0)	14.3	(0.9)	15.3 (0.6)
20-30 days	15.0	(0.9)	13.3	(2.1)	10.5	(0.9)	10.0	(1.0)	12.8 (0.7)
E6-E9									
None	16.7	(1.6)	19.0	(1.1)	17.9	(3.4)	15.1	(1.8)	16.9 (0.9)
1-3 days	34.1	(1.9)	38.6	(3.2)	33.7	(1.9)	37.3	(1.3)	36.2 (1.2)
4-10 days	26.6	(2.2)	23.7	(1.6)	21.7	(0.7)	25.1	(1.2)	25.0 (1.0)
11-19 days	10.9	(0.9)	10.8	(0.7)	10.4	(0.4)	12.0	(1.8)	11.1 (0.7)
20-30 days	11.8	(1.6)	7.9	(1.0)	16.3	(1.5)	10.6	(1.3)	10.7 (0.8)
W1-W4 ^a									
None	17.9	(5.3)	21.5	(17.6)	+	(+)	*	(*)	17.3 (4.7)
1-3 days	40.0	(7.4)	23.3	(11.2)	+	(+)	*	(*)	38.8 (7.1)
4-10 days	19.8	(2.9)	37.7	(24.8)	+	(+)	*	(*)	23.0 (4.2)
11-19 days	11.8	(7.2)	15.4	(10.4)	+	(+)	*	(*)	11.6 (6.1)
20-30 days	10.5	(2.5)	2.2	(1.7)	+	(+)	*	(*)	9.3 (2.2)
O1-O3									
None	10.4	(1.2)	11.4	(2.5)	16.1	(2.2)	9.2	(1.6)	10.4 (1.0)
1-3 days	32.3	(3.7)	31.7	(4.9)	33.1	(7.5)	39.3	(2.6)	35.2 (2.1)
4-10 days	32.7	(4.1)	37.4	(4.3)	28.9	(6.5)	31.8	(2.6)	32.9 (2.0)
11-19 days	14.5	(2.3)	16.2	(3.4)	15.7	(2.3)	12.3	(1.2)	14.0 (1.1)
20-30 days	10.2	(1.4)	3.2	(2.0)	6.2	(3.4)	7.4	(2.1)	7.5 (1.2)
O4-O6									
None	8.1	(2.9)	5.8	(3.2)	0.5	(0.5)	10.4	(1.8)	8.6 (1.2)
1-3 days	25.5	(3.9)	25.8	(3.5)	24.4	(12.5)	26.6	(2.8)	26.1 (2.0)
4-10 days	28.5	(4.3)	35.4	(3.9)	28.0	(11.6)	24.5	(0.6)	27.6 (1.4)
11-19 days	13.0	(3.3)	17.1	(4.9)	21.0	(11.4)	20.1	(2.1)	18.0 (1.6)
20-30 days	24.9	(4.0)	15.9	(3.8)	26.0	(12.8)	18.5	(3.0)	19.7 (2.1)
Total									
None	13.7	(0.5)	19.2	(3.0)	16.9	(1.4)	14.1	(0.9)	15.6 (0.9)
1-3 days	31.9	(1.3)	30.7	(1.6)	27.7	(1.1)	33.8	(0.7)	31.7 (0.7)
4-10 days	25.2	(0.9)	24.4	(0.8)	28.0	(0.8)	27.6	(0.2)	25.9 (0.4)
11-19 days	15.0	(0.7)	13.8	(1.4)	16.1	(0.7)	14.1	(0.7)	14.5 (0.5)
20-30 days	14.2	(0.5)	11.8	(1.7)	11.2	(0.9)	10.5	(0.8)	12.3 (0.6)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. The term "Primary Beverage" represents the beverage (beer, wine, hard liquor) that respondents reported using most often.

*Not applicable.

+Fewer than 20 respondents.

^aEstimates of use for Navy Warrant officers are accompanied by rather large standard errors indicating the data have low reliability and should be interpreted with caution.

in the Other Pacific (89 percent) and in Europe (89 percent), followed by the North Pacific (86 percent) and the Americas (83 percent).

Attention now shifts to the frequency of use of primary beverage. Table 4.5 presents the distribution of days primary beverage was consumed during the past 30 days. For all DoD personnel, the modal category of use is 1-3 days per month (32 percent) followed by 4-10 days a month (26 percent); other frequencies of use were considerably lower. Among 04-06's the modal category is slightly more likely to be 4-10 days (28 percent) than 1-3 days (26 percent). The category 1-3 days a month is also most likely for each service except for the Marine Corps in which equally as many personnel report drinking alcohol 4-10 days a month. Thus, while some drinking is almost universal, most drinkers use alcohol fewer than 10 days per month.

Even though the majority of military personnel tend to be low frequency drinkers, substantial minorities are frequent drinkers of alcohol. As seen in Table 4.5, 12 percent of all DoD personnel drink 20-30 days a month, or almost daily. Use this often is most likely among 04-06 personnel (20 percent compared with 8 to 13 percent of other pay grades). Among Services, drinking 20-30 days/month is most likely in the Army (14 percent compared with 10 to 12 percent for the other Services).

Frequent drinking is examined more closely across regions in Tables 4.6 and 4.7 by examining the percentages of military personnel who consume beer or hard liquor 11 or more days within the past 30 days. Overall, 23 percent of DoD personnel worldwide are frequent drinkers of beer (see Table 4.6). Among regions, frequent drinking of beer is most likely in Europe (31 percent), followed by Other Pacific (26 percent), North Pacific (25 percent) and Americas (22 percent). Worldwide, E1-E5 personnel are more likely than other pay grades categories shown in Table 4.6 to be frequent drinkers of beer (26 percent compared to 18 to 19 percent). Frequent drinking of beer is reported by about a third of the Army E1-E5's in Europe (37 percent), the North Pacific (34 percent), and Other Pacific (30 percent); by Navy E1-E5's in the Other Pacific (30 percent); and by Marine Corps W1-06's in Europe (43 percent), Marine Corps E6-E9's in Europe (31 percent), and Marine Corps E1-E5's in the Other Pacific (30 percent). Frequent drinking was reported by fewer than 25 percent of all Air Force personnel across the regions.

Percentages of frequent drinkers of hard liquor--those who drink it 11 or more days a month--are much lower than percentages of frequent drinkers of

Table 4.4. Primary Beverage Use During the Past 30 Days

Beverage/Pay Grade	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
Americas										
E1-E5	85.2	(1.2)	79.0	(4.2)	80.9	(1.5)	83.8	(1.7)	82.3	(1.5)
E6-E9	82.5	(2.3)	80.7	(1.2)	82.0	(4.3)	84.4	(2.3)	82.4	(1.1)
O1-O3	89.1	(1.5)	88.5	(2.9)	83.3	(2.2)	90.9	(1.8)	89.4	(1.2)
O4-O6	90.9	(4.0)	94.2	(4.1)	+	(+)	89.0	(2.1)	90.8	(1.4)
Total	85.1	(0.7)	80.1	(3.4)	81.6	(1.8)	85.3	(1.1)	83.3	(1.2)
North Pacific										
E1-E5	89.1	(0.7)	78.2	(0.2)	88.3	(2.2)	85.6	(0.8)	86.3	(0.7)
E6-E9	85.1	(3.2)	78.6	(3.6)	84.1	(2.3)	89.6	(3.8)	85.1	(1.8)
O1-O3	83.4	(2.5)	81.6	(8.2)	87.6	(3.9)	89.3	(1.6)	85.5	(1.9)
O4-O6	91.7	(2.8)	86.4	(3.1)	+	(+)	90.7	(4.3)	91.6	(1.7)
Total	87.8	(0.8)	78.8	(0.2)	87.9	(2.1)	86.8	(0.9)	86.1	(0.6)
Other Pacific										
E1-E5	91.6	(0.5)	90.1	(1.3)	91.2	(1.9)	86.7	(1.5)	89.8	(0.7)
E6-E9	81.7	(5.9)	84.1	(1.7)	80.5	(0.6)	88.6	(1.0)	84.5	(1.6)
O1-O3	86.6	(0.9)	90.6	(2.6)	84.8	(8.1)	83.5	(3.5)	87.2	(1.9)
O4-O6	95.1	(2.3)	93.1	(2.3)	+	(+)	95.6	(2.2)	94.4	(1.4)
Total	89.8	(0.8)	88.9	(1.4)	89.9	(1.4)	87.5	(1.2)	88.9	(0.7)
Europe										
E1-E5	88.9	(0.8)	84.5	(3.2)	88.6	(5.3)	89.0	(1.6)	88.8	(0.7)
E6-E9	85.3	(1.7)	82.9	(2.8)	+	(+)	85.3	(2.7)	85.1	(1.4)
O1-O3	93.0	(1.9)	93.0	(4.2)	+	(+)	93.2	(0.9)	93.1	(1.2)
O4-O6	95.3	(3.2)	98.0	(2.8)	+	(+)	93.9	(2.5)	95.3	(1.6)
Total	88.5	(0.7)	86.4	(3.8)	88.2	(4.3)	88.8	(0.8)	88.5	(0.6)
Total Worldwide										
E1-E5	86.7	(0.8)	79.6	(3.8)	82.6	(1.3)	84.7	(1.3)	83.8	(1.2)
E6-E9	83.3	(1.6)	81.0	(1.1)	82.1	(3.4)	84.9	(1.8)	83.1	(0.9)
W1-W4	82.1	(5.3)	78.5	(17.6)	+	(+)	*	(*)	82.7	(4.7)
O1-O3	89.6	(1.2)	88.6	(2.5)	83.9	(2.2)	90.8	(1.6)	89.6	(1.0)
O4-O6	91.9	(2.9)	94.2	(3.2)	99.5	(0.5)	89.6	(1.8)	91.4	(1.2)
Total	86.3	(0.5)	80.8	(3.0)	83.1	(1.4)	85.9	(0.9)	84.4	(0.9)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. "Primary Beverage" represents the beverage (beer, wine, hard liquor) that respondents reported using most often.

* Not applicable.

+ Fewer than 20 respondents.

Table 4.3. Alcoholic Beverage Use During the Past 30 Days

Beverage/Pay Grade	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
Beer										
E1-E5	80.8	(1.4)	74.2	(3.6)	80.5	(1.2)	75.6	(1.1)	77.6	(1.2)
E6-E9	75.7	(1.8)	73.5	(1.8)	75.2	(1.7)	74.3	(2.4)	74.6	(1.1)
W1-W4	66.6	(4.2)	74.5	(18.0)	+	(+)	*	(*)	69.1	(3.9)
O1-O3	79.7	(1.9)	73.2	(7.3)	82.8	(1.8)	78.2	(1.3)	78.1	(1.5)
O4-O6	78.9	(4.5)	86.6	(3.4)	90.7	(4.2)	79.2	(2.5)	81.0	(1.7)
Total	79.5	(0.8)	74.3	(3.0)	80.3	(1.0)	76.0	(0.6)	77.2	(0.9)
Wine										
E1-E5	38.0	(2.5)	28.3	(3.3)	31.8	(2.4)	39.5	(1.5)	35.0	(1.5)
E6-E9	30.4	(3.9)	26.6	(1.3)	28.4	(2.0)	36.1	(2.4)	30.9	(1.7)
W1-W4	40.8	(5.6)	40.4	(21.5)	+	(+)	*	(*)	39.0	(5.0)
O1-O3	58.6	(3.7)	67.6	(5.5)	50.8	(6.1)	67.2	(2.9)	63.3	(2.1)
O4-O6	78.5	(2.4)	84.0	(6.3)	85.3	(8.8)	78.4	(1.6)	79.8	(1.5)
Total	39.2	(2.7)	31.7	(3.0)	33.4	(2.4)	45.3	(1.6)	38.4	(1.4)
Hard Liquor										
E1-E5	53.6	(2.2)	56.0	(2.8)	52.8	(1.2)	51.8	(1.9)	53.7	(1.2)
E6-E9	47.0	(1.7)	47.7	(1.4)	34.0	(3.8)	48.3	(2.6)	46.7	(1.1)
W1-W4	46.0	(8.6)	52.3	(15.3)	+	(+)	*	(*)	47.0	(7.6)
O1-O3	56.6	(3.6)	58.4	(5.4)	49.5	(1.1)	58.6	(1.9)	57.3	(1.7)
O4-O6	60.9	(6.7)	70.2	(5.1)	57.6	(23.0)	72.0	(1.9)	68.6	(2.3)
Total	52.7	(1.8)	55.0	(2.2)	50.3	(0.6)	53.5	(1.2)	53.3	(0.9)
Primary Beverage										
E1-E5	86.7	(0.8)	79.6	(3.8)	82.6	(1.3)	84.7	(1.3)	83.8	(1.2)
E6-E9	83.3	(1.6)	81.0	(1.1)	82.1	(3.4)	84.9	(1.8)	83.1	(0.9)
W1-W4	82.1	(5.3)	78.5	(17.6)	+	(+)	*	(*)	82.7	(4.7)
O1-O3	89.6	(1.2)	88.6	(2.5)	83.9	(2.2)	90.8	(1.6)	89.6	(1.0)
O4-O6	91.9	(2.9)	94.2	(3.2)	99.5	(0.5)	89.6	(1.8)	91.4	(1.2)
Total	86.3	(0.5)	80.8	(3.0)	83.1	(1.4)	85.9	(0.9)	84.4	(0.9)

Note: Tabled values are percentages and represent point prevalence estimates with standard errors in parentheses. Some individuals prefer the term "prevalence rate" when referring to percentages and the term "prevalence" when referring to frequencies of an event. That distinction is not made in the present report. Generally the term "prevalence" has been used when referring to percentages. The category of "Primary Beverage" represents the beverage (beer, wine, or hard liquor) each individual reported using most often during the past 30 days.

* Not applicable.

+Fewer than 20 respondents.

(15 percent), Army (13 percent) and Marine Corps personnel (12 percent) compared with Air Force personnel (5 percent). Within each branch of the service, heavy use 3 or more days a week is most likely among E1-E5 Army personnel (17 percent), E1-E5 Navy personnel (20 percent), E1-E5 Marine Corps personnel (15 percent), and E1-E5 Air Force personnel (7 percent). Frequent heavy drinking among other pay grades is rare, particularly among commissioned officers.

Frequent heavy drinking of wine by military personnel is far less common than frequent heavy drinking of beer, as seen in Table 4.14. Worldwide, 1 percent of DoD personnel drink eight or more glasses of wine 3 or more days a week, 2 percent 1-2 days a week, 6 percent 1-3 days a month, 19 percent less than monthly, and 71 percent never engage in heavy drinking of wine. Heavy, frequent drinking of wine is more likely among E1-E5 personnel (2 percent) than other pay grades. Within services, frequent heavy use of wine is most likely among E1-E5 personnel in the Army (3 percent), the Navy (2 percent), the Marine Corps (1 percent), and the Air Force (less than 1 percent). Frequent heavy drinking of wine among other pay grades is extremely rare.

Frequent heavy drinking of hard liquor by military personnel is more common than for wine but less common than for beer, as seen in Table 4.15. Worldwide, 4 percent of DoD personnel drink 8 or more drinks of hard liquor 3 or more days a week, 5 percent 1-2 days a week, 12 percent 1-3 days a month, and 22 percent less than monthly; 56 percent never drink hard liquor that heavily. Frequent heavy drinking of hard liquor is more likely among E1-E5 personnel (5 percent) than other pay grades (2 percent or less) and among Navy personnel (6 percent) compared with Army (4 percent), Marine Corps (3 percent), or Air Force personnel (2 percent). Within Services, frequent heavy use of hard liquor is most likely among E1-E5 personnel in the Army (6 percent) and the Navy (7 percent). Frequent heavy drinking among other pay grades is rare, particularly among officers.

Frequent heavy drinking of beer, wine, and hard liquor is apparent among military personnel. Overall, 11 percent of DoD personnel drink 8 or more drinks of beer 3 or more times a week; comparable figures for wine are 1 percent and for hard liquor, 4 percent. These figures suggest that there exists a high risk of performance, health and social problems among about 10 percent of all military personnel.

Table 4.14. Frequency of Consuming Eight or More Glasses of Wine in a Single Day During the Past 12 Months

Pay Grade/Frequency	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
E1-E5						
5-7 days a week	1.0 (0.2)	0.5 (0.1)	0.3 (0.2)	0.1 (0.1)		0.6 (0.1)
3-4 days a week	1.9 (0.4)	1.3 (0.2)	0.5 (0.1)	0.4 (0.1)		1.2 (0.2)
1-2 days a week	2.9 (0.3)	1.9 (0.3)	1.6 (0.4)	1.7 (0.3)		2.2 (0.2)
1-3 days a month	9.2 (0.5)	9.1 (1.0)	6.6 (0.3)	5.8 (0.7)		8.0 (0.4)
Less than monthly	20.8 (1.0)	24.6 (0.6)	23.0 (4.1)	19.8 (0.4)		21.9 (0.6)
Never	64.3 (0.8)	62.7 (0.7)	67.9 (3.6)	72.2 (1.2)		66.2 (0.6)
E6-E9						
5-7 days a week	0.1 (0.1)	0.4 (0.4)	0.0 (**)	0.2 (0.2)		0.2 (0.1)
3-4 days a week	0.3 (0.2)	0.1 (-)	0.1 (0.1)	0.1 (0.1)		0.1 (0.1)
1-2 days a week	0.9 (0.4)	0.8 (0.4)	0.1 (0.1)	0.7 (0.3)		0.8 (0.2)
1-3 days a month	3.7 (0.6)	2.6 (0.8)	1.1 (0.3)	2.4 (0.7)		2.8 (0.4)
Less than monthly	14.5 (1.5)	9.7 (1.4)	11.7 (2.5)	10.6 (0.9)		11.8 (0.7)
Never	80.6 (1.9)	86.5 (1.3)	87.0 (2.5)	86.0 (1.2)		84.2 (0.9)
O1-O3						
5-7 days a week	0.5 (0.4)	0.0 (**)	0.2 (0.3)	0.0 (**)		0.2 (0.1)
3-4 days a week	0.9 (0.5)	0.3 (0.3)	0.0 (**)	0.0 (**)		0.4 (0.2)
1-2 days a week	1.2 (0.5)	0.1 (0.1)	0.0 (**)	0.6 (0.4)		0.6 (0.2)
1-3 days a month	1.7 (0.6)	4.1 (1.0)	0.0 (**)	2.1 (0.7)		2.2 (0.4)
Less than monthly	16.4 (2.1)	21.6 (3.2)	24.0 (4.8)	13.5 (3.9)		16.6 (2.1)
Never	79.3 (2.3)	73.9 (2.9)	75.7 (4.9)	83.9 (4.5)		80.1 (2.5)
O4-O6						
5-7 days a week	0.3 (0.3)	0.0 (**)	0.0 (**)	0.1 (0.1)		0.1 (0.1)
3-4 days a week	0.0 (**)	0.0 (**)	0.0 (**)	0.1 (0.1)		- (-)
1-2 days a week	1.7 (1.2)	0.3 (0.2)	0.0 (**)	0.1 (0.1)		0.4 (0.3)
1-3 days a month	3.3 (2.3)	3.9 (1.9)	2.0 (1.9)	1.8 (0.7)		2.5 (0.8)
Less than monthly	10.9 (2.9)	22.9 (8.6)	10.0 (4.2)	12.7 (3.4)		14.1 (2.6)
Never	83.9 (3.8)	73.0 (8.4)	88.0 (4.8)	85.4 (3.3)		82.8 (2.7)
Total						
5-7 days a week	0.8 (0.1)	0.4 (0.1)	0.3 (0.2)	0.1 (-)		0.5 (0.1)
3-4 days a week	1.4 (0.3)	1.0 (0.2)	0.4 (0.1)	0.3 (0.1)		0.9 (0.1)
1-2 days a week	2.3 (0.2)	1.5 (0.3)	1.2 (0.4)	1.3 (0.3)		1.7 (0.1)
1-3 days a month	7.3 (0.4)	7.5 (0.7)	5.4 (0.3)	4.4 (0.5)		6.4 (0.3)
Less than monthly	19.0 (1.0)	21.7 (1.0)	21.3 (3.2)	16.8 (1.1)		19.3 (0.6)
Never	69.2 (0.9)	67.9 (1.0)	71.4 (2.4)	77.2 (1.6)		71.3 (0.7)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Totals include W1-W4's.

- Estimate rounds to zero.

**Informative standard error not available.

Table 4.15. Frequency of Consuming Eight or More Drinks of Hard Liquor in a Single Day during the Past 12 Months

Pay Grade/Frequency	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
E1-E5						
5-7 days a week	2.1 (0.2)	2.4 (0.3)	1.5 (0.7)	0.5 (0.1)	1.7 (0.1)	
3-4 days a week	3.4 (0.5)	4.6 (0.6)	1.8 (0.7)	1.8 (0.3)	3.2 (0.3)	
1-2 days a week	7.0 (0.6)	8.6 (0.5)	5.8 (0.2)	4.3 (0.4)	6.7 (0.3)	
1-3 days a month	15.7 (1.0)	19.4 (0.8)	13.6 (0.3)	10.9 (0.8)	15.4 (0.5)	
Less than monthly	22.1 (0.9)	24.7 (0.7)	29.5 (2.6)	22.8 (0.6)	23.8 (0.5)	
Never	49.7 (1.3)	40.3 (1.4)	47.8 (1.5)	59.7 (1.3)	49.3 (0.7)	
E6-E9						
5-7 days a week	0.9 (0.3)	0.6 (0.4)	0.9 (1.0)	0.7 (0.4)	0.8 (0.2)	
3-4 days a week	1.4 (0.5)	1.5 (0.3)	0.2 (0.1)	0.7 (0.4)	1.1 (0.2)	
1-2 days a week	3.8 (1.0)	2.3 (0.8)	0.8 (0.2)	2.4 (0.9)	2.8 (0.5)	
1-3 days a month	9.0 (1.0)	8.1 (0.7)	7.7 (3.6)	5.0 (0.9)	7.5 (0.5)	
Less than monthly	21.2 (1.3)	22.6 (1.7)	15.1 (2.5)	19.3 (1.9)	20.6 (0.9)	
Never	63.7 (2.4)	64.9 (1.9)	75.3 (5.0)	72.0 (1.8)	67.2 (1.2)	
O1-O3						
5-7 days a week	0.5 (0.4)	0.1 (0.1)	0.2 (0.3)	0.0 (**)	0.2 (0.1)	
3-4 days a week	0.1 (0.1)	0.5 (0.5)	0.0 (**)	0.0 (**)	0.1 (0.1)	
1-2 days a week	1.5 (0.7)	1.1 (0.7)	0.2 (0.2)	0.4 (0.3)	0.9 (0.3)	
1-3 days a month	5.5 (1.0)	4.7 (1.7)	4.5 (2.0)	3.4 (0.5)	4.4 (0.6)	
Less than monthly	16.3 (1.9)	25.4 (4.3)	20.9 (1.0)	16.4 (2.6)	18.3 (1.7)	
Never	76.1 (2.3)	68.2 (5.2)	74.2 (1.4)	79.8 (3.1)	76.1 (2.1)	
O4-O6						
5-7 days a week	0.0 (**)	0.0 (**)	0.0 (**)	0.4 (0.4)	0.2 (0.2)	
3-4 days a week	0.3 (0.3)	0.0 (**)	0.0 (**)	0.0 (**)	0.1 (0.1)	
1-2 days a week	0.7 (0.7)	0.2 (0.1)	0.0 (**)	0.4 (0.5)	0.4 (0.3)	
1-3 days a month	3.9 (1.9)	5.0 (1.9)	0.6 (0.6)	2.6 (1.3)	3.3 (0.9)	
Less than monthly	14.3 (3.0)	23.4 (4.7)	11.1 (4.1)	14.9 (4.3)	16.2 (2.8)	
Never	80.9 (3.6)	71.5 (4.8)	88.2 (4.2)	81.7 (4.9)	79.8 (3.2)	
Total						
5-7 days a week	1.7 (0.2)	1.9 (0.3)	1.4 (0.8)	0.4 (0.1)	1.4 (0.1)	
3-4 days a week	2.7 (0.4)	3.7 (0.5)	1.4 (0.6)	1.2 (0.2)	2.5 (0.2)	
1-2 days a week	5.7 (0.4)	6.8 (0.5)	4.7 (0.3)	3.2 (0.5)	5.2 (0.2)	
1-3 days a month	13.3 (0.9)	16.2 (0.7)	12.0 (0.5)	8.3 (0.8)	12.5 (0.4)	
Less than monthly	21.2 (0.8)	24.3 (0.4)	26.6 (1.9)	20.8 (1.1)	22.4 (0.5)	
Never	55.4 (1.2)	47.1 (1.3)	54.0 (0.9)	66.1 (2.1)	56.0 (0.8)	

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Totals include W1-W4's.

**Informative standard error not available.

D. Quantity/Frequency Classification

The combined quantity and frequency of alcohol use is represented by two measures: the average daily consumption of ethanol index and the drinking levels typology. The construction of both was described earlier in this chapter. The average daily ethanol index is a measure of the average number of ounces of ethanol consumed per day during the past 12 months, while the drinking levels classification provides a typology of drinking patterns.

1. Average Daily Consumption of Ethanol

The distribution of ethanol consumption is presented in Table 4.16. Among total DoD personnel the modal number of daily ethanol ounces (36 percent) is >0-.4 followed by the average consumption level of .5 - 1.9 ounces (30 percent). Overall, almost half of all DoD personnel (47 percent) average less than 2 ounces of ethanol per day, or about four or fewer drinks per day. The >0-.4 ounce category is also the modal category for all pay grades and branches of service.

Despite low ethanol consumption, generally, substantial segments of personnel report consuming an average of 5 or more ounces per day, a quantity present in ten or more drinks. Of all DoD personnel, 7 percent average 5 or more ounces of ethanol a day; 9 percent of E1-E5 personnel do so, while other pay grades are much lower (1-2 percent). The percentages averaging 5 ounces or more a day are higher among Army and Navy personnel (8 percent) than Marine Corps personnel (6 percent) or Air Force personnel (3 percent). Within each branch of the service, average daily consumption of such a heavy amount of ethanol is particularly prevalent among E1-E5 personnel, with 11 percent of Army and Navy personnel averaging 5 or more ounces a day, 7 percent of Marine Corps personnel, and 4 percent of Air Force personnel.

2. Drinking Categories and Ethanol Consumption

Table 4.17 presents the relationship of drinking categories and average daily consumption of ethanol. As described previously, drinking categories were formed from combinations of quantity and frequency of information. This table, along with Table 4.2, permits an approximation of the mapping of categories into drinking levels in terms of total ethanol consumed. Looking first at the average daily consumption of ethanol, modal categories are .01-.40 ounces per day (34 percent) and .41-2.16 ounces per day (34 percent). These amounts of ethanol are present in four or fewer drinks. The modal drinking type is #5; 28 percent of all DoD personnel drink 3-4 times a month

Table 4.16. Average Daily Consumption of Ethanol During Past 12 Months

Pay Grade/Average Daily Ounces Ethanol	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
E1-E5						
None	10.9 (0.7)	9.1 (1.4)	13.6 (2.4)	12.9 (0.9)	11.1 (0.6)	
>0.0 - 0.4	32.0 (1.5)	27.8 (0.7)	28.2 (2.6)	37.9 (1.0)	31.9 (0.7)	
0.5 - 1.9	28.1 (1.0)	29.5 (0.8)	30.4 (1.1)	30.5 (0.7)	29.3 (0.5)	
2.0 - 3.4	11.5 (0.4)	14.4 (0.9)	13.5 (1.5)	9.7 (0.5)	12.1 (0.3)	
3.5 - 4.9	6.9 (0.6)	8.5 (0.6)	7.2 (0.6)	4.7 (0.7)	6.8 (0.3)	
5.0 or more	10.6 (1.1)	10.8 (1.2)	7.1 (1.3)	4.2 (0.3)	8.7 (0.5)	
E6-E9						
None	13.9 (1.6)	16.3 (1.4)	14.7 (4.2)	14.3 (1.6)	14.7 (0.9)	
>0.0 - 0.4	41.0 (1.8)	44.1 (2.0)	41.7 (6.8)	46.2 (0.7)	43.4 (1.0)	
0.5 - 1.9	29.4 (1.7)	26.7 (1.5)	32.6 (9.5)	28.1 (1.6)	28.5 (1.1)	
2.0 - 3.4	8.9 (0.8)	8.0 (1.6)	5.7 (0.3)	6.7 (0.8)	7.8 (0.6)	
3.5 - 4.9	4.0 (0.9)	2.5 (0.4)	3.7 (2.7)	2.7 (0.5)	3.2 (0.4)	
5.0 or more	2.8 (0.4)	2.5 (0.6)	1.6 (1.1)	2.1 (0.7)	2.4 (0.3)	
W1-W4						
None	17.9 (5.3)	20.1 (17.4)	+ (+)	* (*)	17.2 (4.7)	
>0.0 - 0.4	50.8 (7.9)	24.2 (11.3)	+ (+)	* (*)	48.1 (7.8)	
0.5 - 1.9	29.1 (6.2)	53.8 (19.4)	+ (+)	* (*)	32.5 (6.5)	
2.0 - 3.4	0.6 (0.4)	1.0 (1.0)	+ (+)	* (*)	0.7 (0.4)	
3.5 - 4.9	0.3 (0.3)	0.0 (**)	+ (+)	* (*)	0.3 (0.2)	
5.0 or more	1.2 (0.9)	1.0 (1.0)	+ (+)	* (*)	1.3 (0.8)	
O1-O3						
None	10.0 (1.2)	10.1 (2.3)	13.1 (6.2)	8.6 (1.4)	9.7 (1.0)	
>0.0 - 0.4	48.4 (2.3)	48.2 (5.7)	55.3 (6.9)	59.3 (2.0)	53.5 (1.9)	
0.5 - 1.9	33.8 (2.8)	38.1 (6.9)	25.3 (2.7)	27.2 (1.6)	31.2 (1.9)	
2.0 - 3.4	5.1 (0.7)	0.9 (0.4)	6.1 (3.3)	4.1 (1.1)	4.0 (0.6)	
3.5 - 4.9	1.3 (0.6)	0.6 (0.4)	0.0 (**)	0.4 (0.3)	0.7 (0.3)	
5.0 or more	1.3 (0.7)	2.2 (0.9)	0.2 (0.3)	0.3 (0.2)	1.0 (0.3)	
O4-O6						
None	8.1 (2.9)	4.5 (2.4)	0.5 (0.5)	10.4 (1.8)	8.3 (1.1)	
>0.0 - 0.4	48.3 (2.8)	43.7 (6.6)	37.1 (15.5)	43.5 (3.8)	44.3 (2.5)	
0.5 - 1.9	30.6 (3.6)	46.5 (7.2)	52.6 (19.2)	37.1 (2.5)	38.1 (2.1)	
2.0 - 3.4	6.2 (2.1)	5.0 (2.3)	7.2 (4.5)	6.1 (2.7)	6.0 (1.6)	
3.5 - 4.9	4.6 (2.6)	0.2 (0.1)	2.0 (1.9)	1.3 (0.5)	1.9 (0.6)	
5.0 or more	2.2 (1.3)	0.1 (0.1)	0.5 (0.5)	1.7 (1.0)	1.4 (0.6)	
Total						
None	11.4 (0.5)	10.3 (1.4)	13.4 (2.1)	12.5 (0.6)	11.6 (0.5)	
>0.0 - 0.4	35.6 (1.1)	32.2 (1.1)	31.9 (1.6)	42.5 (1.5)	36.3 (0.7)	
0.5 - 1.9	28.9 (0.6)	30.0 (0.8)	30.9 (0.2)	30.2 (0.5)	29.7 (0.3)	
2.0 - 3.4	10.2 (0.5)	12.2 (0.6)	11.8 (1.2)	8.2 (0.7)	10.3 (0.3)	
3.5 - 4.9	5.8 (0.3)	6.8 (0.7)	6.2 (0.6)	3.5 (0.4)	5.5 (0.3)	
5.0 or more	8.2 (0.8)	8.5 (1.1)	5.8 (1.4)	3.2 (0.4)	6.7 (0.4)	

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

* Fewer than 20 respondents.

* Not applicable.

** Informative standard error not available.

Table 4.17. Relationship of Drinking Categories and Average Daily Consumption of Ethanol

Drinking Categories* (Quantity-Frequency Classes)	Average Daily Consumption of Ethanol (ounces)					
	None (No drinks)	0.01-0.40 (<1 drink)	0.41-2.16 (1-4 drinks)	2.17-3.60 (5-7 drinks)	3.61-6.00 (8-12 drinks)	6.01 or more (>12 drinks)
0 Abstainers	11.6	0.0	0.0	0.0	0.0	0.0
1. Those who drink once a month at most and <u>small</u> amounts	0.0	3.8	0.1	0.1	0.0	0.0
2. Those who drink once a month at most and <u>medium</u> amounts	0.0	7.5	1.7	0.6	0.5	0.2
3. Those who drink once a month at most and <u>large</u> amounts	0.0	0.7	0.4	0.1	0.0	0.0
4. Those who drink 3-4 times a month and <u>small</u> amounts	0.0	4.1	0.2	0.0	0.0	0.0
5. Those who drink 3-4 times a month and <u>medium</u> amounts	0.0	16.2	10.5	0.7	0.2	0.1
6. Those who drink 3-4 times a month and <u>large</u> amounts	0.0	1.4	10.5	1.9	0.7	0.3
7. Those who drink at least once a week and <u>small</u> amounts	0.0	0.4	0.7	0.0	0.0	0.0
8. Those who drink at least once a week and <u>medium</u> amounts	0.0	0.0	8.1	1.8	0.7	0.2
9. Those who drink at least once a week and <u>large</u> amounts	0.0	0.0	1.7	4.3	4.6	3.4
Total	11.6	34.1	33.9	9.5	6.7	4.2

Note: Data entries are cell percentages.

and medium amounts per typical drinking session. Comparing the intersection of these two modal categories points out the differences between the two measures. Note that 16 percent of personnel fall in the intersecting cell which shows that one way to obtain a low average ethanol value is to drink medium amounts (1-4 drinks) 3-4 times a month.

3. Drinking Levels

Drinking levels among the services and pay grades are presented in Table 4.18 for five categories of drinkers--abstainers, infrequent-light, moderate, moderate-heavy, and heavy drinkers. The categories combine measurements of the frequency and quantity of alcohol use, as described earlier in this chapter. As defined here for all DoD personnel, 12 percent are abstainers, 19 percent infrequent-light, 30 percent moderate, 26 percent moderate-heavy, and 14 percent heavy drinkers. Since heavy drinkers are of particular interest because of the risk of problems, their distribution will be described in more detail. Heavy drinkers are defined as those who drink at least once a week and large amounts per typical drinking occasion. The E1-E5 paygrade has by far the highest percentage of heavy drinkers, with 18 percent heavy drinkers compared to 8 percent for E6-E9 personnel and 3 to 5 percent for other pay grades. Heavy drinkers are about equally represented in the Army, Navy, and Marine Corps (16 percent); fewer persons in the Air Force (10 percent) are heavy drinkers. Within each service, E1-E5's are most likely to be heavy drinkers, with 19 percent of E1-E5 personnel of the Army, Navy, and Marine Corps and 12 percent of E1-E5 Air Force personnel classified as heavy drinkers.

E. Socio-Demographic Characteristics of Alcohol Users

Discussion in this chapter has documented the prevalence, frequency, and quantity of alcohol use among personnel of the four branches of the service, pay grades, and regions. Attention now shifts to the demographic characteristics of drinking level types, as shown in Tables 4.19 to 4.23. Separate tables are presented for the total DoD, Army, Navy, Marine Corps, and Air Force personnel. Demographic characteristics examined include sex, race/ethnicity, educational level, age, marital/accompaniment status, pay grade, time on active duty, region, and time at present duty station. Row percentage distributions are presented across categories of the drinking level index, while the final column presents percentage distributions for the demographic characteristics. Since more interest is placed on heavier levels of drinking,

Table 4.18 Drinking Levels by Pay Grade

Pay Grade/Drinking Levels	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
E1-E5										
Abstainer	11.1	(0.7)	9.3	(1.4)	13.7	(2.2)	13.1	(0.9)	11.3	(0.6)
Infrequent-Light Drinker	16.8	(1.1)	22.4	(2.8)	12.9	(1.8)	17.7	(0.8)	18.2	(0.9)
Moderate Drinker	27.5	(1.3)	22.4	(1.1)	24.2	(0.4)	32.1	(0.9)	26.9	(0.6)
Moderate-Heavy Drinker	25.3	(1.2)	26.7	(0.4)	30.1	(1.6)	24.7	(1.1)	26.0	(0.6)
Heavy Drinker	19.2	(1.3)	19.3	(3.2)	19.0	(1.7)	12.4	(0.9)	17.5	(1.0)
E6-E9										
Abstainer	14.1	(1.6)	16.4	(1.5)	14.8	(4.2)	14.5	(1.6)	14.9	(0.9)
Infrequent-Light Drinker	21.4	(1.3)	20.3	(2.2)	16.1	(1.5)	20.6	(2.0)	20.5	(1.0)
Moderate Drinker	32.0	(0.9)	30.7	(2.9)	32.3	(0.5)	33.9	(2.0)	32.3	(1.1)
Moderate-Heavy Drinker	24.3	(1.9)	24.0	(1.2)	27.5	(4.0)	24.0	(1.4)	24.3	(0.9)
Heavy Drinker	8.2	(1.0)	8.5	(0.6)	9.3	(1.3)	6.9	(0.9)	8.0	(0.5)
W1-W4										
Abstainer	17.9	(5.3)	20.1	(17.4)	+	(+)	*	(*)	17.1	(4.7)
Infrequent-Light Drinker	17.1	(3.1)	5.9	(3.0)	+	(+)	*	(*)	15.2	(2.6)
Moderate Drinker	34.8	(6.5)	39.6	(8.8)	+	(+)	*	(*)	38.5	(4.7)
Moderate-Heavy Drinker	24.9	(3.4)	33.5	(9.8)	+	(+)	*	(*)	24.4	(3.1)
Heavy Drinker	5.2	(4.0)	0.9	(1.0)	+	(+)	*	(*)	4.7	(3.3)
O1-O3										
Abstainer	10.0	(1.2)	10.1	(2.3)	13.1	(6.2)	8.9	(1.4)	9.8	(1.0)
Infrequent-Light Drinker	21.5	(1.5)	21.1	(6.6)	16.5	(2.0)	25.3	(1.8)	22.7	(1.6)
Moderate Drinker	41.0	(2.6)	40.4	(3.8)	45.6	(7.7)	45.1	(1.5)	42.9	(1.3)
Moderate-Heavy Drinker	24.9	(2.2)	23.6	(4.7)	20.7	(2.6)	17.6	(2.4)	21.3	(1.7)
Heavy Drinker	2.5	(0.7)	4.8	(1.4)	4.2	(2.1)	3.1	(0.6)	3.3	(0.4)
O4-O6										
Abstainer	8.1	(2.9)	4.5	(2.4)	0.5	(0.5)	10.4	(1.8)	8.3	(1.1)
Infrequent-Light Drinker	18.7	(4.1)	13.5	(2.7)	10.6	(3.8)	16.5	(4.0)	16.2	(2.4)
Moderate Drinker	41.5	(5.3)	43.7	(5.6)	41.2	(20.7)	42.9	(1.8)	42.7	(2.1)
Moderate-Heavy Drinker	25.9	(3.8)	36.6	(4.2)	47.7	(24.0)	27.6	(4.2)	29.9	(2.7)
Heavy Drinker	5.7	(2.3)	1.7	(0.8)	0.0	(**)	2.6	(0.9)	3.0	(0.7)
Total										
Abstainer	11.7	(0.5)	10.5	(1.4)	13.5	(2.0)	12.6	(0.6)	11.8	(0.5)
Infrequent-Light Drinker	18.0	(0.9)	21.6	(2.3)	13.4	(1.9)	19.1	(1.0)	18.9	(0.8)
Moderate Drinker	29.8	(1.1)	25.5	(1.3)	27.3	(1.0)	34.8	(0.7)	29.8	(0.6)
Moderate-Heavy Drinker	25.1	(1.0)	26.4	(0.4)	29.4	(1.5)	23.9	(0.8)	25.5	(0.5)
Heavy Drinker	15.5	(1.0)	16.1	(2.6)	16.4	(0.8)	9.5	(0.7)	14.0	(0.8)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

+Fewer than 20 respondents.

*Not applicable.

**Informative standard error not available.

Table 4.19. Drinking Levels by Socio-Demographic Characteristics - Total DoD

Socio-Demographic Characteristics	Drinking Levels					Total DoD
	Abstainer	Infrequent Light	Moderate	Moderate-Heavy	Heavy	
Sex						
Male	11.4	17.9	29.4	26.6	14.7	90.6
Female	15.4	28.3	33.9	14.7	7.7	9.4
Race/Ethnicity						
White	11.0	18.4	29.4	26.3	14.9	71.2
Black	13.9	19.9	33.1	21.7	11.4	16.7
Hispanic	11.9	19.1	26.0	28.4	14.6	6.9
Other	14.7	22.4	29.7	22.7	10.6	5.2
Education						
Less than high school graduate	7.2	15.7	18.8	27.8	30.5	3.7
High school graduate or GED	11.3	18.3	26.5	26.6	17.3	48.2
Beyond high School, no 4 year degree	13.3	19.2	31.0	24.7	11.9	33.1
College graduate or higher	11.1	20.8	40.5	23.3	4.3	15.0
Age						
17-20	10.2	18.8	24.7	27.4	18.9	23.0
21-24	10.0	17.6	27.3	26.7	18.4	30.6
25-30	12.8	19.7	33.1	23.6	10.9	23.2
31 or older	14.6	19.8	35.0	23.8	6.7	23.2
Marital/Accompaniment Status						
Not married	9.1	16.8	26.1	28.2	19.7	49.1
Married, spouse not present at duty station	9.2	18.7	29.0	27.4	15.7	6.9
Married, spouse present at duty station	15.1	21.2	34.1	22.2	7.4	44.0
Paygrade						
E1-E5	11.3	18.2	26.9	26.0	17.5	69.8
E6-E9	14.9	20.5	32.3	24.3	8.0	17.2
W1-W4	17.2	15.2	38.5	24.4	4.7	1.0
O1-O3	9.8	22.7	42.9	21.3	3.3	8.1
O4-O6	8.3	16.2	42.7	29.8	3.0	3.9
Region						
Americas	12.3	20.0	29.9	24.9	12.9	75.9
North Pacific	10.5	15.4	27.8	28.7	17.6	4.7
Other Pacific	9.3	14.9	30.8	29.0	16.0	3.9
Europe	9.9	15.5	30.0	26.6	18.0	15.5
Time on Active Duty						
1 year or less	11.0	22.7	27.8	25.5	13.0	16.4
>1-2 years	9.8	16.6	25.6	27.0	21.0	15.5
>2-3 years	10.1	15.9	25.1	17.6	21.3	12.1
>3-4 years	11.8	17.9	26.6	27.1	16.5	8.1
>4-9 years	11.5	19.1	32.8	24.5	12.1	25.3
10 years or more	14.8	19.4	34.4	23.9	7.5	22.6
Time at Present Duty Station						
6 months or less	11.4	20.7	29.3	25.5	13.1	29.6
7-12 months	11.0	16.9	30.3	25.8	15.9	21.8
>1 to 2 years	11.7	18.0	29.1	25.7	15.5	26.0
>2 to 3 years	11.8	18.2	30.3	26.6	13.1	13.7
More than 3 years	15.0	21.2	31.4	22.4	10.0	8.9
Total DoD	11.8	18.9	29.8	25.5	14.0	100.0

Note: Drinking Level values are row percentages. Values in the Total DoD column are column percentages.

Table 4.20. Drinking Levels by Socio-Demographic Characteristics - Total Army

Socio-Demographic Characteristics	Drinking Levels					Total Army
	Abstainer	Infrequent Light	Moderate	Moderate-Heavy	Heavy	
Sex						
Male	11.0	16.4	29.8	26.5	16.3	88.0
Female	16.1	29.7	30.0	14.6	9.7	12.0
Race/Ethnicity						
White	10.5	17.6	29.2	26.0	16.7	60.9
Black	14.4	19.0	33.0	21.8	11.8	24.6
Hispanic	10.6	17.9	25.7	27.8	18.0	9.1
Other	14.0	18.0	28.6	25.4	14.0	5.4
Education						
Less than high school graduate	6.2	12.6	22.9	25.3	33.0	5.2
High school graduate or GED	10.4	16.9	27.3	26.6	18.8	51.1
beyond high school, no 4 year degree	14.4	19.5	31.0	23.7	11.5	30.1
College graduate or higher	12.6	21.0	39.1	22.6	4.7	13.6
Age						
17-20	9.0	16.4	27.0	25.4	22.2	23.3
21-24	10.9	16.6	28.0	25.3	19.2	31.6
25-30	12.7	19.0	31.1	26.1	11.2	25.2
31 or older	14.8	20.7	34.3	23.2	7.0	20.0
Marital/Accompaniment Status						
Not married	8.9	15.5	27.6	26.9	21.1	49.6
Married, spouse not present at duty station	10.0	15.9	27.8	27.5	18.8	9.2
Married, spouse present at duty station	15.3	21.4	32.9	22.4	7.9	41.2
Paygrade						
E1-E5	11.1	16.8	27.5	25.3	19.2	70.7
E6-E9	14.1	21.4	32.0	24.3	8.2	17.4
W1-W4	17.9	17.2	34.8	24.9	5.2	2.2
O1-O3	10.0	21.5	41.0	24.9	2.6	7.3
O4-O6	8.1	18.8	41.5	25.9	5.7	2.4
Region						
Americas	12.6	20.0	30.8	24.2	12.4	63.6
North Pacific	10.9	12.6	26.5	28.1	22.0	4.3
Other Pacific	9.2	16.6	31.2	29.4	13.5	2.2
Europe	9.9	14.6	28.1	26.2	21.2	29.8
Time on Active Duty						
1 year or less	10.1	17.6	33.6	25.4	13.4	16.3
>1-2 years	10.7	17.2	25.0	24.5	22.6	18.0
>2-3 years	10.6	16.6	23.5	26.4	22.9	13.2
>3-4 years	10.4	17.0	30.6	24.3	17.8	7.1
>4-9 years	12.5	18.2	30.4	26.3	12.6	27.6
10 years or more	14.1	20.3	34.4	23.0	8.2	17.9
Time at Present Duty Station						
6 months or less	10.9	18.8	30.9	25.0	14.4	30.0
7-12 months	11.2	17.0	29.6	25.7	16.5	27.4
>1 to 2 years	11.7	18.6	27.6	24.8	17.3	25.4
>2 to 3 years	12.6	17.1	31.5	24.7	14.1	12.1
More than 3 years	15.6	17.5	31.6	25.3	10.0	5.1
Total Army	11.6	18.0	29.8	25.1	15.5	100.0

Note: Drinking Level values are row percentages. Values in the Total Army column are column percentages.

Table 4.21. Drinking Levels by Socio-Demographic Characteristics - Total Navy

Socio-Demographic Characteristics	Drinking Levels					Total Navy
	Abstainer	Infrequent Light	Moderate	Moderate-Heavy	Heavy	
<u>Sex</u>						
Male	10.4	21.3	25.1	26.8	16.4	94.3
Female	10.8	27.7	31.7	18.7	11.1	5.7
<u>Race/Ethnicity</u>						
White	10.3	20.3	24.8	27.5	17.2	77.6
Black	11.6	25.0	28.5	21.4	13.5	10.6
Hispanic	10.7	26.1	21.9	26.4	14.9	5.5
Other	10.7	28.5	32.0	21.0	7.8	6.3
<u>Education</u>						
Less than high school graduate	7.2	23.2	10.4	31.3	27.9	4.3
High school graduate or GED	11.2	22.8	22.6	25.5	17.8	56.3
Beyond High School, no 4 year degree	9.8	19.9	28.7	26.8	14.8	29.2
College graduate or higher	9.6	19.4	38.2	27.8	5.1	10.2
<u>Age</u>						
17-20	11.3	24.8	19.9	26.4	17.7	31.0
21-24	5.8	20.9	23.1	29.1	21.0	29.5
25-30	10.0	21.0	30.2	23.9	14.9	19.6
31 or older	16.6	18.5	33.0	24.7	7.2	19.9
<u>Marital/Accompaniment Status</u>						
Not married	8.8	21.4	21.5	28.0	20.3	59.0
Married, spouse not present at duty station	8.2	27.3	29.4	22.3	12.8	7.4
Married, spouse present at duty station	13.9	20.8	31.5	24.4	9.4	33.6
<u>Paygrade</u>						
E1-E5	9.3	22.4	22.4	26.7	19.3	74.0
E6-E9	16.4	20.3	30.7	24.0	8.6	17.5
W1-W4	20.1	5.9	39.6	33.5	0.9	.4
O1-O3	10.1	21.1	40.4	23.6	4.8	5.3
O4-O6	4.5	13.5	43.8	36.6	1.7	2.8
<u>Region</u>						
Americas	10.6	22.1	24.9	26.2	16.2	88.8
North Pacific	10.4	24.7	24.9	28.4	11.6	2.7
Other Pacific	8.6	16.3	30.6	27.4	17.1	6.0
Europe	12.3	14.5	32.8	27.6	12.8	2.5
<u>Time on Active Duty</u>						
1 year or less	12.9	29.3	20.6	24.2	13.0	27.6
>1-2 years	6.4	16.6	22.3	30.5	24.2	13.1
>2-3 years	5.4	16.4	23.4	27.6	27.2	11.0
>3-4 years	6.7	22.0	20.7	33.2	17.4	7.3
>4-9 years	8.0	20.2	29.5	26.4	15.9	22.1
10 years or more	17.1	18.6	33.1	23.2	8.0	18.9
<u>Time at Present Duty Station</u>						
6 months or less	12.6	26.4	23.3	24.7	13.0	40.6
7-12 months	8.7	18.0	26.7	27.3	19.4	17.6
>1 to 2 years	9.8	17.5	26.9	28.2	17.6	24.6
>2 to 3 years	8.0	18.2	27.6	29.0	17.2	12.7
More than 3 years	9.0	25.4	26.2	20.5	18.9	4.5
Total Navy	10.5	21.6	25.4	26.4	16.1	100

Note: Drinking Level values are row percentages. Values in the Total Navy column are column percentages.

Table 4.22. Drinking Levels by Socio-Demographic Characteristics - Total Marine Corps

Socio-Demographic Characteristics	Drinking Levels					Total Marine Corps
	Abstainer	Infrequent Light	Moderate	Moderate-Heavy	Heavy	
Sex						
Male	13.5	13.3	26.5	29.9	16.8	96.1
Female	13.7	18.0	47.9	15.7	4.7	3.9
Race/Ethnicity						
White	12.0	12.6	26.4	30.1	18.8	72.5
Black	20.3	14.3	34.5	19.6	11.3	14.5
Hispanic	12.5	13.9	26.8	40.8	6.0	9.1
Other	17.5	25.4	18.2	25.5	13.4	3.9
Education						
Less than high school graduate	10.5	11.8	19.8	25.1	32.8	5.0
High school graduate or GED	12.4	13.8	24.0	32.4	17.4	58.0
Beyond high school, no 4 year degree	16.4	12.8	32.1	23.9	14.8	27.4
College graduate or higher	13.2	13.9	37.7	29.0	6.2	9.7
Age						
17-20	13.2	11.7	21.6	35.7	17.8	30.8
21-24	13.2	15.4	25.1	25.4	20.9	39.6
25-30	13.4	12.5	34.2	28.8	11.1	18.3
31 or older	15.4	13.1	39.5	27.1	4.9	11.3
Marital/Accompaniment Status						
Not married	11.8	11.0	23.8	32.1	21.3	57.1
Married, spouse not present at duty station	9.2	11.1	32.0	38.6	9.1	6.0
Married, spouse present at duty station	16.8	17.7	32.0	23.7	9.9	36.9
Paygrade						
E1-E5	13.7	12.9	24.2	30.1	19.0	78.5
E6-E9	14.8	16.1	32.3	27.5	9.3	12.9
W1-W4	0.0	0.0	96.4	0.0	3.6	0.6
O1-O3	13.1	16.5	45.6	20.7	4.2	6.1
O4-O6	0.5	10.6	41.2	47.7	0.0	1.9
Region						
Americas	14.7	13.6	27.3	28.9	15.6	79.5
North Pacific	9.1	14.6	28.2	30.5	17.7	12.8
Other Pacific	8.1	10.7	24.2	34.0	23.0	6.5
Europe	1.8	7.3	34.6	26.9	19.4	1.2
Time on Active Duty						
1 year or less	5.3	13.5	30.8	38.4	12.0	13.0
>1-2 years	14.2	10.7	26.1	26.7	22.3	20.4
>2-3 years	16.3	12.9	17.2	34.7	18.8	16.4
>3-4 years	17.3	13.7	17.8	27.7	23.4	13.0
>4-9 years	10.7	16.3	32.3	26.4	14.3	23.0
10 years or more	17.7	13.1	38.2	25.2	5.9	14.2
Time at Present Duty Station						
6 months or less	9.8	11.7	28.4	34.0	16.1	23.9
7-12 months	13.0	13.6	30.0	29.4	14.0	28.0
>1 to 2 years	15.0	12.4	25.7	26.2	20.7	26.1
>2 to 3 years	16.9	17.0	22.0	30.4	13.7	13.1
More than 3 years	15.4	15.3	28.4	24.8	16.1	8.9
Total Marine Corps	13.5	13.4	27.3	29.4	16.4	100.0

Note: Drinking Level values are row percentages. Values in the Total Marine Corps column are column percentages.

Table 4.23. Drinking Levels by Socio-Demographic Characteristics - Total Air Force

Socio-Demographic Characteristics	Drinking Levels					Total Air Force
	Abstainer	Infrequent Light	Moderate	Moderate-Heavy	Heavy	
Sex						
Male	12.1	18.0	34.3	25.3	10.3	88.9
Female	16.8	27.9	39.1	12.8	3.4	11.1
Race/Ethnicity						
White	12.0	19.0	35.0	24.4	9.6	78.2
Black	12.3	20.0	36.5	22.3	8.9	12.8
Hispanic	15.8	17.7	30.9	24.8	10.8	4.8
Other	20.8	20.2	31.4	19.7	7.8	4.1
Education						
Less than high school graduate	9.9	9.8	26.7	37.1	16.4	0.7
High school graduate or GED	12.6	16.4	32.7	25.1	13.2	33.6
Beyond High School, no 4 year degree	13.9	19.7	32.3	24.3	9.8	42.5
College graduate or higher	10.3	22.1	42.9	21.2	3.5	23.2
Age						
17-20	8.3	16.1	32.7	28.5	14.4	12.3
21-24	11.5	16.6	31.5	27.0	13.4	27.6
25-30	14.8	21.2	37.6	19.0	7.4	25.5
31 or older	13.4	20.6	36.2	23.5	6.3	34.6
Marital/Accompaniment Status						
Not married	8.4	15.0	31.9	29.0	15.7	36.4
Married, spouse not present at duty station	8.8	14.9	30.3	31.4	14.5	3.7
Married, spouse present at duty station	15.4	21.9	36.9	20.4	5.4	59.9
Paygrade						
E1-E5	13.1	17.7	32.1	24.7	12.4	61.8
E6-E9	14.5	20.6	34.0	24.0	6.9	18.3
W1-W4	*	*	*	*	*	*
O1-O3	8.9	25.3	45.1	17.6	3.1	12.3
O4-O6	10.4	16.5	42.9	27.6	2.6	7.7
Region						
Americas	13.3	19.8	35.1	22.9	9.0	78.3
North Pacific	11.3	14.2	30.9	28.1	15.5	4.6
Other Pacific	11.2	13.5	34.7	28.7	11.9	3.4
Europe	9.6	18.3	34.7	27.6	9.8	13.7
Time on Active Duty						
1 year or less	10.2	18.9	35.6	23.1	12.2	6.9
>1-2 years	9.3	18.2	29.8	28.2	14.5	13.2
>2-3 years	11.1	15.6	33.5	25.9	13.9	10.3
>3-4 years	15.0	17.5	31.4	25.0	11.0	8.4
>4-9 years	13.2	20.2	39.1	20.0	7.5	26.2
10 years or more	13.8	20.0	34.6	24.6	7.0	35.0
Time at Present Duty Station						
6 months or less	10.5	16.7	38.5	24.9	9.4	20.2
7-12 months	12.0	17.5	35.8	22.7	12.0	16.5
>1 to 2 years	12.4	19.2	33.8	24.6	10.0	28.4
>2 to 3 years	12.4	19.6	33.2	25.6	9.1	16.9
More than 3 years	16.1	22.6	33.1	21.3	6.9	17.9
Total Air Force	12.6	19.1	34.8	23.9	9.5	100.0

Note: Drinking Level values are row percentages. Values in the Total Air Force column are column percentages.

* Not applicable.

discussion will focus on those classified as moderate/heavy and heavy drinkers of alcohol.

For the total DoD, moderate/heavy and heavy alcohol drinkers are more prevalent among males, whites and Hispanics, personnel with less education, persons aged 24 and under, those not married or married with spouse not present, E1-E5 personnel, regions other than the Americas, those who have spent 1-3 years on active duty, and 7 months to 3 years at the present duty station (see Table 4.19).

The patterns among personnel of the four branches of the service are similar to the total DoD. Minor differences occur primarily for the distribution of drinking types by region. Army personnel showed heaviest drinking in Europe and the North Pacific. For Navy personnel, there were few differences among regions. Marine Corps drinking was heaviest in the Other Pacific. In the Air Force, drinking was heavier in the North Pacific and Other Pacific regions.

F. Summary of Prevalence of Alcohol Use

Analyses presented in this chapter detail the prevalence of alcohol use and frequency and quantity of that use during the past 30 days and, for some indicators, during the past 12 months. This summary highlights some of the major findings.

1. Alcohol Use During the Past 30 Days

- The use of alcohol among military personnel is almost universal. Of all military personnel, 77 percent drank beer, 38 percent drank wine and 53 percent drank hard liquor during the past 30 days. Overall, 84 percent of all military personnel drank their "primary beverage" during the past 30 days.
- The prevalence rate of using alcoholic beverages is highest among 04-06 personnel. Prevalence rates range from 69 percent for hard liquor (compared to 47 to 57 percent for other pay grades), 80 percent for wine (versus 31 to 63 percent), 81 percent for beer (versus 69 to 78 percent) and 91 percent for primary beverage (versus 83 to 90 percent).
- Few differences exist in the proportion of drinkers across regions. The highest is the Other Pacific (89 percent) and Europe (89 percent), followed by the North Pacific (86 percent) and the Americas (83 percent).
- Nearly all military personnel drink alcoholic beverages, but the frequency with which they drink is generally low. For Total DoD, 32 percent consumed their primary beverage 1-3 days a month and 26 percent 4-10 days a month.

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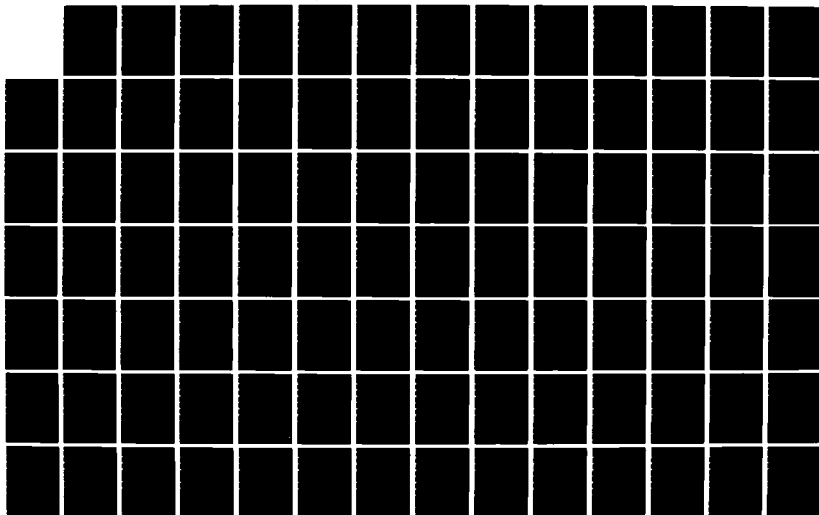
WORLDWIDE SURVEY OF ALCOHOL AND NONMEDICAL DRUG USE
AMONG MILITARY PERSONNEL: 1982(U) RESEARCH TRIANGLE
INST RESEARCH TRIANGLE PARK NC R M BRAY ET AL 1983
MDA903-83-C-0120

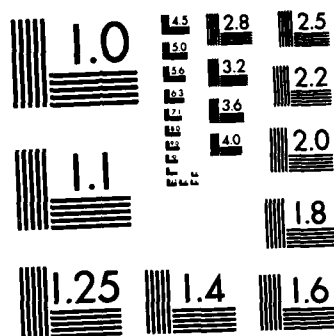
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- The use of primary beverage 20-30 days a month occurs more often among 04-06's (20 percent) than among E1-E5's (13 percent), E6-E9's (11 percent) or 01-03's (8 percent).
- The modal quantity of any type of alcohol consumed in a typical drinking day is low, 2-3 drinks, and is the same for all Services and pay grades.
- For all beverages heavy consumption, 8 or more drinks on a typical drinking day during the past 30 days, occurs most often among E1-E5 personnel (16 percent beer; 2 percent wine; 8 percent hard liquor). For E6-E9's, 01-03's and 04-06's, it occurs substantially less often (1-5 percent beer, 0-1 percent wine, 0-3 percent hard liquor).

2. Frequency of Heavy Drinking

- Frequent heavy drinking (8 or more drinks per day) of beer during the past 12 months is more common than similar consumption of hard liquor or wine. Across all pay grades, heavy drinking on 3 or more days a week, ranges from 11 percent for beer to 4 percent for hard liquor and 1 percent for wine.
- Frequent heavy drinking of all beverages occurs most often among E1-E5's. Consumption of 8 or more drinks on 3 or more days a week was reported by 15 percent of the respondents for beer, by 2 percent for wine, and by 5 percent for hard liquor.

3. Quantity/Frequency Classifications

- The combined quantity and frequency of alcohol use is represented by two measures: the average daily ounces of ethanol consumed and the typology of drinking levels (abstainer, infrequent-light, moderate, moderate-heavy, heavy).
- The average daily consumption of ethanol tends to be low. For Total DoD, 78 percent consume less than 2 ounces of ethanol a day on the average.
- Heavy ethanol consumption of 5 or more ounces per day occurs for 7 percent of all personnel. Among pay grades it is most likely among E1-E5 personnel (9 percent). Among Services it is most likely in the Army and Navy (8-9 percent).
- The classification of personnel by drinking levels shows the modal category to be moderate drinkers, followed by moderate-heavy. Thirty percent of DoD personnel are moderate drinkers (drink about once a week and small to moderate amounts per occasion), and 26 percent are moderate-heavy drinkers (drink at least once a week and medium to large amounts per occasion).
- The drinking level typology defines 14 percent of personnel as heavy drinkers. Among pay grades, 18 percent of E1-E5's are heavy drinkers compared with 3 to 8 percent of other pay grades.

Among the Services, the Army, Navy, and Marine Corps have more heavy drinkers (each 16 percent) than the Air Force (10 percent).

4. Demographic Characteristics of Drinking Levels

- There are notable differences in the distribution of drinking levels by demographic characteristics.
- Heavy patterns of drinking for Total DoD occurred more often among males, whites and Hispanics, non-high school graduates, personnel aged 24 and below, personnel unmarried or married with spouse not present, personnel of pay grade E1-E5, and those who had spent 1-3 years on active duty or 7 months to 2 years at their present duty station.
- Overall, analyses of alcohol prevalence have shown that most military personnel are low to moderate drinkers, but substantial proportions are frequent, heavy drinkers.

5. PREVALENCE OF NONMEDICAL DRUG USE

Considerable numbers of people in the military Services report use of drugs for nonmedical purposes. The amount and type of such drug use is of concern to congressional, defense, and Service leaders since it has important implications for performance and safety both by the military and within the military. The present chapter describes the prevalence and incidence of nonmedical drug use as reported by respondents for the periods of 30 days and 12 months prior to taking the survey. Analyses detail the occurrence of use of eight specific drugs and two miscellaneous categories of drugs among members of the four Services by regional location and by pay grade.

The chapter begins with a brief discussion of the definition of drug use and measures of drug use behavior. Next is a description of basic patterns of nonmedical drug use that gives an overview of drug use, provides estimates of drug use for the major pay grade groups, and drug use among E1-E5's. The four sections that follow give comparisons of region and pay grade differences in drug use for users of any drug, users of marijuana only, users of any drug except marijuana, and high users of specific drugs except marijuana. Drug users are then profiled by demographic characteristics, following which multiple drug use is discussed. The chapter concludes with a report of the combined use of alcohol and drugs and a summary of major findings.

A. Definition and Measures of Drug Use Behavior

Respondents to the present survey were asked to indicate their level of use of each of the following drugs for nonmedical purposes:

- . Marijuana or Hashish
- . PCP
- . LSD and Other Hallucinogens
- . Cocaine
- . Amphetamines and Other Stimulants
- . Tranquilizers
- . Barbiturates and Other Sedatives
- . Heroin
- . Other Opiates than Heroin
- . Other Drugs (i.e., any not included above such as over-the-counter drugs and inhalants).

Each drug was identified by its common trade or clinical name as well as common "street" names to facilitate identification by military personnel. For each drug, respondents were asked to indicate the period of last use of the drug and the number of days of use within the past 30 days. To ease discussion of the prevalence of use, categories were combined to indicate whether military personnel had used the drug within the past 30 days, the past 12 months, or ever during their lifetime.

In addition to information about use of specific drugs, indices were created of the prevalence of use of any drug, any drug except marijuana and the number of drugs used. The indices of any drug use and any drug use except marijuana were constructed by creating use, no use (1,0) dichotomies for each drug and then setting an individual's score to the maximum score value of the drugs in the set. Thus, use of any drug in the set produced an index score of 1, use of no drugs produced a score of zero and completely missing data produced a missing value.

The number of drugs indices were created by summing similar 1,0 dichotomies, across the entire set of drugs. The range of the Number of Drugs Index varied from 0 to 10. Indices were created both for 30 day drug use and 12 month use following the same procedures.

Collectively, the drug use frequencies and the indices provide measures of the prevalence of drug use for nonmedical purposes.

B. Basic Patterns of Drug Use

An examination of basic drug use patterns serves as the starting point for our discussion of drug use prevalence. The history of use for the various drugs is first considered. This is followed by a discussion of pay grade differences in use for each drug and then a closer examination of drug use behavior among E1-E5's, the heaviest user group.

1. Overview of Drug Use

The prevalence of use of the various drugs and drug types for non-medical purposes during the past 30 days, the past 12 months, and ever is presented in Table 5.1 for the four Services and the total DoD. Estimates are at Service wide levels without regard to paygrade. Looking first at use of any drug during their lifetime shows almost 42 percent of total DoD personnel as participants. Overall, 27 percent used some drugs within the past 12 months and 19 percent used within the past 30 days.

Table 5.1. Nonmedical Drug Use During the Past 30 Days, the past 12 Months, and Ever During Lifetime

Drug/Period of Use	Service									
	Army		Navy		Marine Corps		Air Force		Total DoD	
Marijuana										
Past 30 Days	23.9	(1.7)	13.4	(2.0)	17.1	(2.0)	9.6	(1.1)	16.5	(0.9)
Past 12 Months	30.5	(1.7)	25.6	(1.6)	26.4	(2.4)	14.3	(1.5)	24.3	(0.9)
Ever Used	43.7	(0.8)	44.1	(1.9)	44.3	(3.2)	30.6	(2.0)	40.2	(0.9)
PCP										
Past 30 Days	0.9	(0.2)	0.8	(0.3)	0.7	(0.2)	0.2	(-)	0.6	(0.1)
Past 12 Months	1.9	(0.3)	1.5	(0.4)	1.4	(0.1)	0.3	(0.1)	1.3	(0.1)
Ever Used	6.1	(0.5)	7.1	(0.9)	8.3	(0.4)	3.1	(0.4)	5.7	(0.3)
LSD/Hallucinogens										
Past 30 Days	2.5	(0.4)	2.5	(0.5)	4.3	(0.6)	0.6	(0.2)	2.1	(0.2)
Past 12 Months	5.6	(0.6)	6.5	(0.7)	7.1	(0.9)	1.5	(0.2)	4.8	(0.3)
Ever Used	11.1	(0.6)	13.4	(1.3)	15.1	(1.4)	5.6	(0.5)	10.5	(0.4)
Cocaine										
Past 30 Days	3.7	(0.5)	3.3	(0.8)	3.9	(0.8)	1.3	(0.4)	2.9	(0.3)
Past 12 Months	7.3	(0.8)	9.7	(1.3)	7.7	(0.3)	3.0	(0.5)	6.8	(0.5)
Ever Used	14.0	(0.6)	17.5	(1.7)	17.3	(0.6)	8.7	(0.7)	13.7	(0.5)
Amphetamines/Stimulants										
Past 30 Days	5.5	(0.7)	5.3	(1.0)	6.5	(0.2)	1.8	(0.2)	4.5	(0.4)
Past 12 Months	8.4	(0.7)	10.2	(1.4)	9.3	(0.4)	3.2	(0.4)	7.6	(0.5)
Ever Used	14.2	(0.7)	18.2	(1.7)	19.4	(1.5)	9.1	(0.7)	14.3	(0.6)
Tranquilizers										
Past 30 Days	1.6	(0.3)	1.2	(0.2)	1.4	(0.2)	0.6	(0.2)	1.2	(0.1)
Past 12 Months	3.0	(0.4)	3.4	(0.4)	2.9	(0.7)	0.9	(0.2)	2.5	(0.2)
Ever Used	7.5	(0.4)	9.3	(0.9)	8.7	(0.3)	4.5	(0.6)	7.2	(0.3)
Barbiturates/Sedatives										
Past 30 Days	1.6	(0.2)	1.1	(0.1)	1.4	(0.1)	0.7	(0.2)	1.2	(0.1)
Past 12 Months	3.2	(0.4)	3.5	(0.3)	2.8	(0.4)	1.1	(0.3)	2.7	(0.2)
Ever Used	7.8	(0.4)	10.0	(0.9)	10.1	(0.7)	4.8	(0.6)	7.8	(0.3)
Heroin										
Past 30 Days	0.8	(0.1)	0.5	(0.1)	0.9	(0.2)	0.1	(-)	0.5	(0.1)
Past 12 Months	1.3	(0.2)	0.9	(0.2)	1.2	(0.3)	0.1	(-)	0.8	(0.1)
Ever Used	3.5	(0.3)	2.7	(0.3)	3.1	(0.9)	1.0	(0.2)	2.6	(0.2)
Other Opiates										
Past 30 Days	1.1	(0.2)	0.6	(0.1)	1.0	(0.1)	0.2	(0.1)	0.7	(0.1)
Past 12 Months	1.8	(0.3)	1.7	(0.2)	1.7	(0.2)	0.5	(0.1)	1.4	(0.1)
Ever Used	5.2	(0.4)	6.1	(0.7)	6.2	(0.6)	2.6	(0.4)	4.8	(0.2)
Other Drugs										
Past 30 Days	3.9	(0.3)	2.8	(0.3)	4.4	(0.9)	2.4	(0.5)	3.2	(0.2)
Past 12 Months	5.1	(0.4)	5.3	(0.2)	6.0	(1.0)	3.0	(0.6)	4.6	(0.3)
Ever Used	9.0	(0.5)	10.3	(0.8)	12.0	(2.0)	6.0	(0.6)	8.8	(0.4)
Any Drug										
Past 30 Days	26.2	(1.8)	16.2	(2.2)	20.6	(2.0)	11.9	(1.5)	19.0	(1.0)
Past 12 Months	32.4	(1.8)	28.1	(1.7)	29.9	(3.2)	16.4	(1.8)	26.6	(1.0)
Ever Used	45.1	(0.8)	45.6	(1.9)	46.1	(3.8)	32.4	(2.3)	41.8	(0.9)
Any Drug Except Marijuana										
Past 30 Days	10.6	(1.0)	9.6	(1.6)	12.0	(1.3)	5.1	(0.8)	8.9	(0.6)
Past 12 Months	15.5	(1.2)	17.0	(1.7)	17.2	(2.0)	7.3	(1.0)	13.8	(0.7)
Ever Used	22.4	(0.8)	26.0	(1.9)	27.7	(3.3)	15.5	(1.3)	21.9	(0.7)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

- Estimate rounds to zero.

Most of the total level of any drug use appears to be accounted for by the use of marijuana. Of all the drugs studied here, the use of marijuana is most prevalent. As shown in Table 5.1, 40 percent of DoD personnel have used marijuana at some time, 24 percent used it within the past 12 months, and 16 percent within the past 30 days. Nevertheless, even when the use of marijuana is omitted, substantial percentages of users remain. Of all DoD personnel, 22 percent report some use of other drugs except marijuana. Further, 14 percent used such drugs within the past 12 months and 9 percent within the past 30 days.

Consideration of the entire array of drugs shows use levels of individual drugs to be low with the exception of marijuana. After marijuana, the drugs most often used during the past 12 months and past 30 days are amphetamines/stimulants, cocaine, LSD/hallucinogens, and those classed as "other drugs." The order of use varies slightly between 12 months and 30 days as to which drug is more prevalent. Figures indicate that during the past 30 days, 4 percent of DoD personnel used amphetamines/stimulants, 3 percent "other drugs" or cocaine, and 2 percent LSD/hallucinogens. One percent or fewer have used PCP, tranquilizers, barbiturates/sedatives, heroin, or other opiates for nonmedical purposes during the past 30 days.

Levels of use vary significantly among personnel of the four Services. The Air Force consistently shows the lowest levels of use for all time periods. For instance, 32 percent of Air Force personnel have ever used any drug compared with 45 to 46 percent of personnel from other Services. Comparable figures for use during the past 12 months are 16 percent for the Air Force and 28 to 32 percent for other services; during the past 30 days the Air Force, 12 percent contrasted with 16 to 26 percent for the Army, Navy, and Marines. This pattern of lowest use by the Air Force holds throughout Table 5.1 for every drug surveyed.

In contrast to the low levels of use among the Air Force, levels of lifetime use for all of the drugs listed are roughly similar among the Navy and the Marine Corps and are highest of all Services. Army personnel show intermediate levels of prevalence. These figures for use throughout the individuals' lifetimes probably describe some periods in which they were not in the military, especially for those in their first term of service.

Use levels of the various drugs during the past 12 months and the past 30 days (Table 5.1) show very similar although not identical patterns. The

Air Force is consistently the lowest and the Army, Navy, and Marine Corps are roughly similar though there are some exceptions. Use of any drug is highest in the Army, but this differential is largely explained by the high level of marijuana use among Army personnel. This concentration on use of marijuana in the Army yields a situation in which Army personnel are roughly comparable (30 day use) or lower (12 month use) than Navy and Marine Corps personnel in the level of use of any drug except marijuana.

Examination of prevalence figures across the three time periods for any drug and for marijuana suggest that the Army has had the least impact on curbing the drug problem. Lifetime drug use rates are virtually the same in the Army, Navy, and Marines, but 12 month and 30 day rates are clearly higher in the Army.

2. Drug Use by Pay Grade

Table 5.2 arrays drug use by military pay grade of the respondents. As can be seen, personnel in pay grades E1-E5 are by far the most frequent users of all types of drugs for nonmedical purposes. The level of use among E1-E5 personnel is generally five times or more that of other pay grades. Use among the other pay grades tends to be low and of somewhat similar magnitude, although use tends to be lowest among O4-O6's. For instance, 36 percent of E1-E5 personnel have used any drug during the past 12 months compared to 5 to 7 percent of pay grades E6-E9, W1-W4, O1-O3 and 2 percent of pay grade O4-O6. Use during the past 30 days ranges from 26 percent for E1-E5's to 3 to 5 percent for E6-E9's, W1-W4's and O1-O3's and 1 percent for O4-O6's.

Use of marijuana during the past 12 months varies from 33 percent for E1-E5 personnel to 1 percent for O4-O6 personnel and during the past 30 days from 22 percent for E1-E5's to less than 1 percent for O4-O6's. As with figures presented in Table 5.1, marijuana is the drug most likely to be used by military personnel in all of the pay grades.

3. Drug Use Among E1-E5s

In view of the highest drug use among E1-E5's, more detailed figures for this group are presented in Table 5.3. The patterns of use are similar to those seen in Table 5.1 although the levels of use are considerably higher.

Among E1-E5's, 52 percent have used one or more drugs during their lifetime; nearly 36 percent have used within the past year; and 26 percent have used within the past 30 days. Focusing on "any drug" shows the Air Force with the lowest use (45 percent) and the other Services with similar lifetime use

Table 5.2. Nonmedical Drug Use During the Past 30 Days and the Past 12 Months by Pay Grade

Drug/Period of Use	Pay Grade					Total DoD
	E1-E5	E6-E9	W1-W4	01-03	04-06	
Marijuana						
Past 30 Days	22.5 (1.2)	3.6 (0.3)	3.1 (1.3)	1.6 (0.5)	0.4 (0.3)	16.5 (0.9)
Past 12 Months	32.9 (0.9)	5.5 (0.6)	4.8 (1.6)	4.3 (0.8)	0.9 (0.4)	24.3 (0.9)
PCP						
Past 30 Days	0.9 (0.1)	0.2 (0.1)	0.0 (**)	0.2 (0.1)	0.1 (0.1)	0.6 (0.1)
Past 12 Months	1.8 (0.2)	0.2 (0.1)	0.0 (**)	0.2 (0.1)	0.2 (0.1)	1.3 (0.1)
LSD/Hallucinogens						
Past 30 Days	3.0 (0.3)	0.2 (0.1)	0.0 (**)	0.2 (0.2)	0.1 (0.1)	2.1 (0.2)
Past 12 Months	6.7 (0.4)	0.4 (0.2)	0.0 (**)	0.7 (0.3)	0.1 (0.1)	4.8 (0.3)
Cocaine						
Past 30 Days	4.0 (0.4)	0.4 (0.1)	0.0 (**)	0.6 (0.2)	0.1 (0.1)	2.9 (0.3)
Past 12 Months	9.4 (0.6)	0.6 (0.1)	0.1 (0.1)	1.4 (0.4)	0.4 (0.3)	6.8 (0.5)
Amphetamines/Stimulants						
Past 30 Days	6.2 (0.5)	0.6 (0.1)	0.7 (0.7)	0.8 (0.3)	0.1 (0.1)	4.5 (0.4)
Past 12 Months	10.4 (0.6)	1.1 (0.2)	0.7 (0.7)	1.3 (0.5)	0.2 (0.1)	7.6 (0.5)
Tranquilizers						
Past 30 Days	1.6 (0.2)	0.2 (0.1)	0.0 (**)	0.3 (0.2)	0.2 (0.1)	1.2 (0.1)
Past 12 Months	3.4 (0.2)	0.4 (0.1)	0.0 (**)	0.7 (0.3)	0.2 (0.1)	2.5 (0.2)
Barbiturates/Sedatives						
Past 30 Days	1.6 (0.1)	0.2 (0.1)	0.0 (**)	0.2 (0.1)	0.1 (0.1)	1.2 (0.1)
Past 12 Months	3.7 (0.2)	0.4 (0.2)	0.0 (**)	0.4 (0.2)	0.1 (0.1)	2.7 (0.2)
Heroin						
Past 30 Days	0.7 (0.1)	0.1 (0.1)	0.0 (**)	0.2 (0.1)	0.1 (0.1)	0.5 (0.1)
Past 12 Months	1.1 (0.1)	0.1 (0.1)	0.0 (**)	0.2 (0.1)	0.1 (0.1)	0.8 (0.1)
Other Opiates						
Past 30 Days	1.0 (0.1)	0.0 (**)	0.0 (**)	0.2 (0.1)	0.1 (0.1)	0.7 (0.1)
Past 12 Months	1.9 (0.2)	0.1 (0.1)	0.0 (**)	0.4 (0.2)	0.1 (0.1)	1.4 (0.1)
Other Drugs						
Past 30 Days	4.2 (0.3)	1.1 (0.2)	0.3 (0.3)	1.3 (0.4)	0.5 (0.3)	3.2 (0.2)
Past 12 Months	6.0 (0.3)	1.4 (0.2)	0.4 (0.4)	1.8 (0.4)	0.5 (0.3)	4.6 (0.3)
Any Drug						
Past 30 Days	25.6 (1.3)	4.8 (0.4)	3.5 (1.3)	2.9 (0.5)	0.8 (0.4)	19.0 (1.0)
Past 12 Months	35.5 (1.0)	7.2 (0.5)	5.1 (1.5)	5.6 (0.8)	1.6 (0.5)	26.6 (1.0)
Any Drug Except Marijuana						
Past 30 Days	12.0 (0.8)	2.1 (0.3)	1.0 (0.8)	2.0 (0.5)	0.5 (0.3)	8.9 (0.6)
Past 12 Months	18.5 (0.8)	3.1 (0.3)	1.2 (0.8)	3.4 (0.7)	0.8 (0.4)	13.8 (0.7)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

- Estimate rounds to zero

**Informative standard error not available.

Table 5.3. Nonmedical Drug Use During the Past 30 Days, the Past 12 Months, and Ever During Lifetime for E1-E5's

Drug/Period of Use	Service									
	Army		Navy		Marine Corps		Air Force		Total DoD	
Marijuana										
Past 30 Days	31.7	(2.1)	17.5	(2.8)	21.3	(1.2)	15.0	(1.1)	22.5	(1.2)
Past 12 Months	39.7	(2.0)	33.4	(1.5)	33.0	(1.3)	22.0	(1.2)	32.9	(0.9)
Ever Used	52.3	(0.8)	53.5	(1.6)	52.8	(0.8)	42.6	(1.3)	50.3	(0.6)
PCP										
Past 30 Days	1.2	(0.2)	1.0	(0.4)	0.9	(0.3)	0.3	(0.1)	0.9	(0.1)
Past 12 Months	2.5	(0.4)	2.0	(0.5)	1.7	(0.2)	0.4	(0.1)	1.8	(0.2)
Ever Used	8.3	(0.6)	9.1	(1.4)	10.0	(0.2)	4.7	(0.4)	7.8	(0.4)
LSD/Hallucinogens										
Past 30 Days	3.4	(0.5)	3.2	(0.6)	5.4	(0.6)	1.0	(0.3)	3.0	(0.3)
Past 12 Months	7.7	(0.8)	8.6	(0.9)	8.9	(0.8)	2.3	(0.3)	6.7	(0.4)
Ever Used	14.1	(0.8)	16.8	(1.9)	18.7	(1.0)	8.3	(0.4)	13.9	(0.6)
Cocaine										
Past 30 Days	5.0	(0.6)	4.3	(1.1)	4.8	(0.7)	2.0	(0.6)	4.0	(0.4)
Past 12 Months	9.9	(1.0)	12.8	(1.6)	9.6	(0.6)	4.7	(0.7)	9.4	(0.6)
Ever Used	17.8	(0.8)	21.9	(2.5)	21.6	(1.6)	13.2	(0.5)	18.2	(0.8)
Amphetamines/Stimulants										
Past 30 Days	7.3	(0.9)	7.0	(1.3)	8.2	(0.6)	2.8	(0.3)	6.2	(0.5)
Past 12 Months	11.1	(0.9)	13.5	(1.6)	11.8	(0.3)	5.0	(0.5)	10.4	(0.6)
Ever Used	17.6	(0.9)	22.5	(2.4)	24.0	(1.0)	13.4	(0.5)	18.6	(0.7)
Tranquilizers										
Past 30 Days	2.1	(0.3)	1.6	(0.3)	1.6	(0.2)	0.8	(0.2)	1.6	(0.2)
Past 12 Months	3.9	(0.6)	4.5	(0.4)	3.5	(0.8)	1.4	(0.2)	3.4	(0.2)
Ever Used	9.5	(0.6)	11.3	(1.3)	10.5	(0.7)	6.5	(0.6)	9.4	(0.4)
Barbiturates/Sedatives										
Past 30 Days	2.1	(0.3)	1.5	(0.1)	1.7	(0.3)	1.0	(0.3)	1.6	(0.1)
Past 12 Months	4.2	(0.6)	4.7	(0.2)	3.5	(0.7)	1.7	(0.3)	3.7	(0.2)
Ever Used	9.9	(0.6)	12.5	(1.4)	12.3	(0.6)	7.0	(0.6)	10.1	(0.4)
Heroin										
Past 30 Days	1.1	(0.2)	0.7	(0.1)	1.1	(0.2)	0.1	(-)	0.7	(0.1)
Past 12 Months	1.7	(0.2)	1.1	(0.2)	1.5	(0.3)	0.1	(-)	1.1	(0.1)
Ever Used	4.6	(0.4)	3.4	(0.4)	3.9	(0.9)	1.4	(0.1)	3.4	(0.2)
Other Opiates										
Past 30 Days	1.5	(0.3)	0.8	(0.2)	1.2	(0.1)	0.3	(0.1)	1.0	(0.1)
Past 12 Months	2.4	(0.4)	2.3	(0.2)	2.1	(0.4)	0.7	(0.2)	1.9	(0.2)
Ever Used	6.8	(0.5)	7.6	(1.2)	7.5	(0.4)	3.9	(0.4)	6.4	(0.4)
Other Drugs										
Past 30 Days	5.0	(0.5)	3.5	(0.4)	5.3	(1.1)	3.4	(0.6)	4.2	(0.3)
Past 12 Months	6.5	(0.6)	6.6	(0.4)	7.1	(1.1)	4.2	(0.8)	6.0	(0.3)
Ever Used	11.2	(0.7)	12.6	(1.4)	14.2	(2.0)	8.3	(0.6)	11.2	(0.5)
Any Drug										
Past 30 Days	34.3	(2.2)	20.9	(3.1)	25.3	(1.5)	18.1	(1.4)	25.6	(1.3)
Past 12 Months	41.7	(2.1)	36.3	(1.7)	36.8	(2.4)	24.7	(1.6)	35.5	(1.0)
Ever Used	53.7	(0.7)	54.9	(1.7)	54.6	(1.7)	44.5	(1.5)	51.9	(0.6)
Any Drug Except Marijuana										
Past 30 Days	13.9	(1.2)	12.5	(2.0)	14.6	(1.2)	7.6	(1.0)	12.0	(0.8)
Past 12 Months	20.3	(1.4)	22.1	(1.9)	21.0	(1.7)	10.9	(1.2)	18.5	(0.8)
Ever Used	27.3	(1.1)	32.0	(2.6)	33.5	(2.5)	21.9	(0.9)	27.9	(0.9)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

- Estimate rounds to zero.

(about 54 percent), but the Army is highest during the past 12 months (42 percent) and past 30 days (34 percent). The identical pattern holds for marijuana use among the Services across time periods. Levels of use of marijuana are particularly high among E1-E5's in the Army. Notably, 40 percent of E1-E5 Army personnel have used marijuana at some time during the past 12 months and 32 percent in the past 30 days. Other drug use besides marijuana occurred for about a fifth of the Army, Navy, and Marines and a tenth of the Air Force during the past 12 months and about 13 to 14 percent for the first three services and 8 percent in the Air Force during the past 30 days.

C. Use of Any Drug: Region and Pay Grade Comparisons

Analyses now shift to a consideration of regional differences in the prevalence of drug use, using three measures of drug use--any drug use, use of marijuana/hashish, and use of drugs except marijuana/hashish. Analyses examine use during the past 30 days and the past 12 months. Results presented above showed that use is lower among Air Force personnel than other Services and substantially higher among E1-E5 personnel than other pay grades. Additional considerations of regional differences show in more detail where the highest levels of use are occurring. This section focuses on analyses of the prevalence of any drug use.

1. Use During Past 30 Days

Table 5.4 presents Service and total estimates of drug use for pay grade groups within each of the world regions. Total worldwide estimates for all pay grades were previously presented in Table 5.1 and E1-E5 estimates in Table 5.3, but are repeated here for completeness. Major worldwide differences among the Services show use of any drug is highest among Army personnel (26 percent), lowest among Air Force personnel, and at intermediate levels for Marine Corps (21 percent) and Navy personnel (16 percent).

Regional comparisons show that use is highest in Europe overall (27 percent), followed by Other Pacific (20 percent), the Americas (18 percent), and North Pacific (16 percent). Service comparisons within Regions show use in the Army is highest in Europe but highest for the Navy, Marine Corps, and Air Force in the Other Pacific. Interestingly, Service comparisons within Regions show that the highest DoD total for Europe is explained by the dominance of Army personnel in that region. Thus, although greatest overall use occurs in Europe, three of the Services have their largest use problem in the Other Pacific.

Table 5.4. Any Drug Use During the Past 30 Days

Region/Pay Grade	Service				Total DoD	
	Army	Navy	Marine Corps	Air Force		
Americas						
E1-E5	30.4 (3.4)	20.9 (3.4)	25.6 (1.9)	19.0 (1.8)	23.8 (1.6)	
E6-E9	9.1 (1.2)	3.0 (0.8)	3.6 (1.3)	2.3 (0.4)	4.8 (0.5)	
O1-O3	4.7 (1.3)	3.1 (1.3)	4.5 (2.4)	1.6 (0.4)	3.0 (0.6)	
O4-O6	1.5 (1.6)	0.0 (**)	+ (+)	0.5 (0.6)	0.6 (0.4)	
Total	22.9 (2.7)	16.4 (2.5)	20.8 (2.5)	12.1 (1.9)	17.6 (1.3)	
North Pacific						
E1-E5	29.9 (0.4)	16.7 (1.1)	20.9 (2.0)	12.8 (0.8)	21.0 (0.6)	
E6-E9	6.0 (0.7)	2.6 (0.5)	1.2 (0.3)	1.3 (0.7)	4.1 (0.4)	
O1-O3	5.1 (2.2)	1.6 (1.7)	8.8 (2.9)	1.2 (1.2)	3.1 (1.1)	
O4-O6	0.0 (**)	0.0 (**)	+ (+)	0.0 (**)	0.0 (**)	
Total	22.5 (1.5)	12.2 (0.5)	16.8 (1.8)	9.5 (0.7)	16.0 (0.7)	
Other Pacific						
E1-E5	40.0 (10.6)	24.7 (2.9)	31.0 (2.0)	22.8 (2.6)	28.4 (2.9)	
E6-E9	3.9 (0.6)	4.9 (0.6)	2.6 (3.1)	3.2 (0.6)	4.0 (0.5)	
O1-O3	3.8 (3.6)	0.8 (0.9)	0.0 (**)	2.6 (0.5)	1.8 (0.7)	
O4-O6	3.4 (0.5)	1.7 (1.2)	+ (+)	1.5 (0.7)	2.1 (0.7)	
Total	25.9 (11.3)	17.5 (2.0)	26.3 (0.3)	15.0 (3.4)	19.9 (2.7)	
Europe						
E1-E5	41.8 (1.5)	14.5 (0.2)	25.1 (1.3)	14.6 (1.9)	34.6 (1.2)	
E6-E9	8.0 (1.3)	3.1 (0.5)	+ (+)	1.6 (1.2)	5.8 (0.9)	
O1-O3	2.9 (1.5)	1.9 (1.6)	+ (+)	2.2 (1.6)	2.6 (1.0)	
O4-O6	4.1 (3.9)	0.0 (**)	+ (+)	2.1 (2.8)	2.3 (1.8)	
Total	33.6 (1.2)	9.1 (0.5)	16.8 (0.9)	10.4 (2.1)	26.7 (1.0)	
Total Worldwide						
E1-E5	34.3 (2.2)	20.9 (3.1)	25.3 (1.5)	18.1 (1.4)	25.6 (1.3)	
E6-E9	8.5 (0.8)	3.1 (0.7)	3.1 (1.0)	2.2 (0.4)	4.8 (0.4)	
W1-W4 ^a	4.1 (1.6)	0.0 (**)	+ (+)	* (*)	3.5 (1.3)	
O1-O3	4.4 (1.1)	2.8 (1.1)	4.7 (1.9)	1.6 (0.4)	2.9 (0.5)	
O4-O6	2.0 (1.3)	0.1 (0.1)	0.0 (**)	0.7 (0.5)	0.8 (0.4)	
Total	26.2 (1.8)	16.2 (2.2)	20.6 (2.0)	11.9 (1.5)	19.0 (1.0)	

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

+ Fewer than 20 respondents.

** Informative standard error not available.

Consistent with earlier tables, E1-E5 pay grades show the highest prevalence of use for all comparisons. Most notable use for each Service among E1-E5's is the Army in Europe (42 percent), and the Navy (25 percent), Marine Corps (31 percent) and Air Force (23 percent) in the Other Pacific.

2. Use During Past 12 Months

Table 5.5 presents data for any drug use during the past 12 months. Overall regional comparisons show Europe with highest use (31 percent) and the other regions about the same (25-26 percent). Like the prior regional comparisons, the Army shows highest use in Europe (38 percent) and the Marine Corps (35 percent) and Air Force (20 percent) show highest use in the Other Pacific. The Navy, however, has highest use in Americas (29 percent). As expected, E1-E5's again show highest use for these services in the same regions. The Army in Europe shows 47 percent users (and the same number in the Other Pacific although the estimate is less stable), the Navy in Americas (37 percent) and the Marine Corps (41 percent) and Air Force (29 percent) in the Other Pacific.

D. Use of Marijuana/Hashish: Region and Pay Grade Comparisons

Much drug use in the military involves the use of marijuana or hashish. Prevalence levels examined in this section for the use of marijuana/hashish therefore closely mirror the patterns of prevalence by service, region, and pay grade discussed above for any drug.

1. Use During Past 30 Days

The prevalence of use of marijuana or hashish during the past 30 days by branch of the service, region, and pay grade is presented in Table 5.6. As with patterns observed for any drug use during the past 30 days, the use of marijuana/hashish among the four branches is highest in the Army (24 percent), at intermediate levels for the Marine Corps (17 percent) and Navy (13 percent), and lowest in the Air Force (10 percent).

Regional comparisons show highest use in Europe (24 percent) and lower use in the Other Pacific, the Americas, and the North Pacific (17 to 13 percent). For all regions and branches of the service, use levels are highest for personnel in the E1-E5 classification. Looking within each of the four Services shows most frequent use for the Army in Europe (39 percent), and most frequent use for the Navy (26 percent) Marine Corps (29 percent), and Air Force (19 percent) in the Other Pacific. One reason for the high levels of use observed in Europe overall is the fact that Army personnel dominate those surveyed in Europe.

days and past 12 months. Since use of drugs is most prevalent among E1-E5 personnel, only the number of drugs used by E1-E5 personnel will be investigated. Although the number of drugs used during the past 30 days or 12 months does not provide information on the simultaneous use of drugs, it may, however, indicate the propensity to use more than one drug at a time and the level of commitment to drug use generally.

1. Use During the Past 30 Days

Table 5.14 arrays the distribution of number of drugs across regions. As shown, the most prevalent pattern of drug use among all DoD personnel is single drug use but substantial percentages engage in multiple drug use. For total DoD personnel, 16 percent used only one drug during the past 30 days, while 9 percent used 2 or more drugs. Single drug use is also the most prevalent pattern of use among personnel of all branches of the service and regions of the world. Using two or more drugs is most prevalent in Europe (11 percent) compared with the other regions (8 to 9 percent) and more prevalent in the Army (12 percent), Marine Corps (11 percent), and Navy (10 percent) compared to the Air Force (5 percent). Across all Services and regions, multiple drug use is particularly high among E1-E5 Army personnel in Europe (14 percent), Army personnel in the other Pacific (12 percent) and Marine Corps personnel in the Americas (12 percent).

2. Use During the Past 12 Months

Patterns of single and multiple drug use during the past 12 months presented in Table 5.15 are similar to those observed for the past 30 days. For all DoD personnel, single drug use tends to be the most prevalent pattern of use although multiple drug use is relatively more prevalent than for 30 days. For all DoD personnel, 19 percent used only one drug during the past 12 months, while 16 percent used two or more drugs. Single drug use is also the most prevalent pattern across the Services and regions, except among Navy personnel, for whom multiple drug use is slightly more prevalent (19 percent) than single drug use (17 percent). Multiple drug use is higher in Europe and the Americas (16 percent) than in the North Pacific and Other Pacific (14 to 15 percent) and higher in the Army, Navy, and Marine Corps (18 to 19 percent) than in the Air Force (9 percent). Across all branches of the service and regions, multiple drug use is particularly high among E1-E5 Army personnel in Europe, Navy personnel in the Americas, and Marine Corps personnel in the North Pacific (each 20 percent), Army personnel in the Other Pacific (19 percent), and Army and Marine Corps personnel in the Americas (18 percent).

Table 5.13. The Four Drugs Used Most Often Excluding Marijuana During the Past 12 Months for E1-E5's

Region/Drug Type	Service								Total DoD
	Army		Navy		Marine Corps		Air Force		
Americas									
LSD/Hallucinogens	6.7	(1.1)	8.9	(1.0)	9.0	(0.9)	2.3	(0.3)	6.6 (0.5)
Cocaine	10.2	(1.5)	13.3	(1.8)	9.4	(0.6)	5.0	(0.9)	9.9 (0.8)
Amphetamines/Stimulants	10.7	(1.5)	14.2	(1.8)	12.3	(0.2)	5.1	(0.7)	10.7 (0.8)
Other Drugs	5.3	(0.8)	6.9	(0.4)	7.2	(1.4)	4.1	(1.0)	5.7 (0.4)
North Pacific									
LSD/Hallucinogens	4.4	(1.0)	7.1	(0.4)	9.5	(1.3)	1.9	(0.2)	5.4 (0.5)
Cocaine	7.3	(1.3)	6.4	(0.3)	12.1	(3.0)	3.9	(0.3)	7.5 (0.9)
Amphetamines/Stimulants	11.3	(1.1)	7.8	(0.4)	11.3	(2.0)	6.5	(0.7)	9.5 (0.6)
Other Drugs	7.4	(0.5)	4.8	(0.2)	7.7	(1.1)	3.4	(1.1)	6.0 (0.4)
Other Pacific									
LSD/Hallucinogens	10.1	(2.7)	6.1	(1.8)	8.1	(3.8)	2.5	(0.1)	6.5 (1.2)
Cocaine	13.4	(1.9)	11.7	(3.1)	7.9	(1.5)	5.2	(2.0)	9.9 (1.5)
Amphetamines/Stimulants	10.7	(1.5)	7.8	(1.3)	9.3	(0.1)	5.8	(0.4)	8.2 (0.7)
Other Drugs	7.8	(2.6)	4.0	(0.5)	5.9	(1.0)	5.5	(1.6)	5.4 (0.8)
Europe									
LSD/Hallucinogens	9.8	(1.4)	2.1	(1.5)	0.0	(**)	2.4	(0.3)	7.8 (1.0)
Cocaine	9.4	(1.0)	4.6	(1.5)	2.6	(4.0)	3.3	(0.5)	7.8 (0.8)
Amphetamines/Stimulants	12.0	(1.0)	4.6	(0.6)	2.6	(4.0)	3.8	(0.4)	9.9 (0.8)
Other Drugs	8.5	(1.0)	4.0	(0.8)	0.0	(**)	4.7	(1.1)	7.4 (0.8)
Total Worldwide									
LSD/Hallucinogens	7.7	(0.8)	8.6	(0.9)	8.9	(0.8)	2.3	(0.3)	6.7 (0.4)
Cocaine	9.9	(1.0)	12.8	(1.6)	9.6	(0.6)	4.7	(0.7)	9.4 (0.6)
Amphetamines/Stimulants	11.1	(0.9)	13.5	(1.6)	11.8	(0.3)	5.0	(0.5)	10.4 (0.6)
Other Drugs	6.5	(0.6)	6.6	(0.4)	7.1	(1.1)	4.2	(0.8)	6.0 (0.3)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

** Informative standard error not available.

use of amphetamines and other drugs is high in Europe. In the Navy, use of LSD/hallucinogens, amphetamines/stimulants, and other drugs is particularly high in the Americas and the use of cocaine highest in the Other Pacific. In the Marine Corps use of all four of these drugs types is highest in the Americas. In the Air Force, use of the four drug types is high in the Other Pacific, while the use of cocaine is also high in the Americas, and the use of amphetamines high in the North Pacific.

2. Use During Past 12 Months

Prevalence of drugs used most often other than marijuana/ hashish among E1-E5 personnel during the past 12 months is presented in Table 5.13. Many similarities between patterns of use during the past 30 days and the past 12 months are seen. For all DoD personnel, the most frequently used of the four drugs is amphetamines (10 percent), as was also true for 30 day prevalence levels. However, the order of use of the other three drugs is slightly different than that seen for 30 days: cocaine was used by 9 percent, LSD/hallucinogens by 7 percent, and other drugs by 6 percent of E1-E5 personnel within the past year. On a regional basis, the use of LSD, cocaine, and other drugs is particularly high in Europe and the use of cocaine and amphetamines high in the Americas, somewhat different than seen for 30 days. The use of LSD and other drugs is highest in the Marine Corps, as seen for 30 day use, while the use of cocaine and amphetamines is highest in the Navy, in contrast to the pattern for 30 day use. In the Army, the use of LSD and cocaine is highest in the Other Pacific and use of amphetamines and other drugs highest in Europe, as seen for 30 day use. Similar to the pattern for 30 day use, the use of all four drugs is highest among Navy personnel in the Americas. In contrast to higher levels of 30 day use seen in the Americas for the Marine Corps, the four drugs with the exception of amphetamines were used more widely in the North Pacific and amphetamines in the Americas during the past year. The regional distribution of drug use for E1-E5 Air Force personnel was similar for 30 days and 12 months, with most frequent use of the four drugs in the Other Pacific (as well as frequent use of amphetamines in the North Pacific).

G. Multiple Drug Use

Discussion in this chapter thus far has focused on the use of single drugs or any drugs by military personnel. Considerable data now show multiple drug use to be very common (e.g., Bray et al, 1982). Accordingly, attention is directed to an examination of the number of drugs used during the past 30

Table 5.12. The Four Drugs Used Most Often Excluding Marijuana During the Past 30 Days for E1-E5's

Region/Drug Type	Service								Total DoD
	Army		Navy		Marine Corps		Air Force		
Americas									
LSD/Hallucinogens	2.9	(0.7)	3.3	(0.6)	5.8	(0.6)	1.0	(0.4)	2.9 (0.3)
Cocaine	5.3	(1.0)	4.4	(1.2)	5.2	(0.8)	2.3	(0.7)	4.2 (0.6)
Amphetamines/Stimulants	6.9	(1.4)	7.3	(1.4)	9.0	(0.9)	3.0	(0.4)	6.3 (0.6)
Other Drugs	4.0	(0.7)	3.6	(0.5)	5.5	(1.4)	3.3	(0.7)	3.9 (0.4)
North Pacific									
LSD/Hallucinogens	2.0	(0.7)	3.0	(0.3)	3.8	(0.4)	0.4	(0.2)	2.2 (0.3)
Cocaine	3.1	(0.4)	1.5	(0.3)	3.0	(1.6)	1.0	(0.3)	2.3 (0.5)
Amphetamines/Stimulants	7.4	(0.7)	4.2	(0.9)	5.2	(0.6)	3.2	(0.1)	5.2 (0.3)
Other Drugs	6.1	(0.3)	3.3	(0.6)	4.8	(1.6)	2.5	(1.0)	4.4 (0.5)
Other Pacific									
LSD/Hallucinogens	4.9	(0.5)	2.5	(0.8)	4.9	(3.5)	1.2	(0.2)	3.1 (0.7)
Cocaine	8.0	(0.7)	5.8	(2.2)	3.1	(1.0)	2.3	(1.4)	4.9 (1.0)
Amphetamines/Stimulants	6.0	(0.3)	3.9	(0.5)	5.5	(-)	3.1	(0.8)	4.4 (0.2)
Other Drugs	6.4	(1.6)	3.0	(0.4)	4.3	(0.1)	4.8	(1.9)	4.3 (0.6)
Europe									
LSD/Hallucinogens	4.6	(1.0)	0.9	(0.1)	0.0	(**)	0.7	(0.2)	3.5 (0.7)
Cocaine	4.6	(0.4)	2.2	(1.1)	0.0	(**)	1.1	(0.1)	3.7 (0.3)
Amphetamines/Stimulants	8.1	(0.9)	2.0	(0.9)	0.0	(**)	1.2	(0.3)	6.3 (0.7)
Other Drugs	6.5	(0.9)	2.3	(0.4)	0.0	(**)	3.8	(0.9)	5.7 (0.7)
Total Worldwide									
LSD/Hallucinogens	3.4	(0.5)	3.2	(0.6)	5.4	(0.6)	1.0	(0.3)	3.0 (0.3)
Cocaine	5.0	(0.6)	4.3	(1.1)	4.8	(0.7)	2.0	(0.6)	4.0 (0.4)
Amphetamines/Stimulants	7.3	(0.9)	7.0	(1.3)	8.2	(0.6)	2.8	(0.3)	6.2 (0.5)
Other Drugs	5.0	(0.5)	3.5	(0.4)	5.3	(1.1)	3.4	(0.6)	4.2 (0.3)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

- Estimate rounds to zero.

** Informative standard error not available.

Americas (14 percent) compared with the North Pacific (13 percent) and the Other Pacific (12 percent) though differences are not large. Among the Services, Air Force personnel show the lowest levels of use during the past 12 months (7 percent), as was seen for 30 day use, but the order of magnitude of prevalence among the other branches differs slightly from that seen for 30 days. Use is most prevalent in the Marine Corps and Navy (17 percent) followed by the Army (16 percent). Across the four branches and regions, levels of use are substantially higher for E1-E5 personnel although higher use is seen among officers in the Army in Europe than in other places. Within the four branches, highest levels of use are among E1-E5 personnel in the Army in the Other Pacific and Europe (22 percent), the Navy in the Americas (23 percent), the Marine Corps in the North Pacific (22 percent), and the Air Force in the Other Pacific (13 percent).

F. Drugs Used Most Often Excluding Marijuana: Regional Comparisons

Discussion has focused in this chapter on the use of any drug for non-medical purposes, the use of marijuana/hashish, and any drug except marijuana/hashish. Attention now shifts to drugs used most often other than marijuana--LSD/hallucinogens, cocaine, amphetamines/stimulants, and "other drugs," including over-the-counter drugs and inhalants. More detailed tables for the use of these drugs as well as PCP, tranquilizers, barbiturates/sedatives, heroin, and other opiates are presented in Appendix G. Since levels of use are substantially higher among E1-E5 personnel, prevalence is examined only for that pay grade grouping.

1. Use During Past 30 Days

Prevalence of drugs used most often excluding marijuana/hashish are presented in Table 5.12. For the total DoD, prevalence levels among E1-E5 personnel for the four drugs considered here are highest for amphetamines (6 percent), followed by other drugs (4 percent), cocaine (4 percent), and LSD/hallucinogens (3 percent). Regional comparisons across all Services shows the use of LSD/hallucinogens, amphetamines, and "other drugs" (e.g., over-the-counter drugs and inhalants) to be highest in Europe and the use of cocaine to be highest in the Other Pacific. Considering use among the Services at the worldwide level, the use of LSD/hallucinogens, amphetamines, and other drugs is highest in the Marine Corps and the use of cocaine highest in the Army compared with other Services. Within the Army, use of LSD/hallucinogens, cocaine, and other drugs is particularly high in the Other Pacific, while the

Table 5.11. Any Drug Use Except Marijuana/Hashish During the Past 12 Months

Region/Pay Grade	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
Americas										
E1-E5	19.6	(2.1)	22.7	(2.1)	21.4	(2.0)	11.2	(1.5)	18.7	(1.0)
E6-E9	5.0	(1.0)	2.8	(0.6)	3.6	(1.3)	1.4	(0.4)	3.1	(0.4)
O1-O3	5.1	(1.9)	4.5	(2.2)	4.5	(2.4)	1.9	(0.3)	3.5	(0.8)
O4-O6	0.0	(**)	0.0	(**)	+	(+)	1.0	(0.7)	0.6	(0.4)
Total	14.7	(1.7)	17.8	(1.9)	17.6	(2.4)	7.3	(1.2)	13.8	(0.9)
North Pacific										
E1-E5	17.9	(0.9)	16.2	(3.1)	22.0	(3.9)	10.5	(1.3)	16.7	(1.2)
E6-E9	4.3	(0.9)	2.1	(1.0)	2.4	(1.3)	2.1	(0.4)	2.9	(0.5)
O1-O3	3.9	(2.3)	3.4	(-)	8.9	(2.9)	2.5	(1.4)	4.4	(1.1)
O4-O6	0.0	(**)	0.0	(**)	5.7	(4.2)	0.0	(**)	0.9	(0.9)
Total	13.6	(1.0)	11.9	(2.0)	18.0	(3.6)	8.1	(1.2)	12.9	(1.0)
Other Pacific										
E1-E5	22.0	(5.3)	18.3	(2.9)	16.6	(1.4)	13.2	(0.6)	17.5	(1.7)
E6-E9	1.7	(1.4)	2.6	(0.8)	0.0	(**)	2.6	(-)	2.2	(0.5)
O1-O3	3.8	(3.6)	1.6	(1.1)	3.1	(4.1)	2.6	(0.5)	2.4	(0.8)
O4-O6	0.0	(**)	2.4	(1.8)	+	(+)	3.0	(1.5)	1.7	(1.0)
Total	14.1	(6.0)	12.8	(2.0)	14.1	(0.5)	9.1	(1.2)	12.4	(1.5)
Europe										
E1-E5	21.8	(1.6)	10.0	(3.0)	5.2	(8.0)	9.4	(1.2)	18.5	(1.2)
E6-E9	3.8	(0.9)	3.3	(0.6)	+	(+)	1.6	(0.5)	3.1	(0.6)
O1-O3	4.0	(1.4)	3.8	(3.3)	+	(+)	1.1	(0.8)	3.0	(0.9)
O4-O6	4.1	(3.9)	0.0	(**)	+	(+)	2.1	(2.8)	2.3	(1.8)
Total	17.6	(1.3)	6.7	(1.2)	3.5	(5.7)	6.8	(1.2)	14.4	(1.0)
Total Worldwide										
E1-E5	20.3	(1.4)	22.1	(1.9)	21.0	(1.7)	10.9	(1.2)	18.5	(0.8)
E6-E9	4.5	(0.7)	2.8	(0.6)	3.2	(1.1)	1.5	(0.3)	3.1	(0.3)
W1-W4 ^a	1.2	(1.0)	0.0	(**)	+	(+)	*	(*)	1.2	(0.8)
O1-O3	4.8	(1.5)	4.2	(1.8)	4.8	(1.9)	1.8	(0.3)	3.4	(0.7)
O4-O6	0.6	(0.6)	0.2	(0.1)	0.7	(0.7)	1.1	(0.7)	0.8	(0.4)
Total	15.5	(1.2)	17.0	(1.7)	17.2	(2.0)	7.3	(1.0)	13.8	(0.7)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

+ Fewer than 20 respondents.

** Informative standard error not available.

Table 5.10. Frequency of Any Drug Use Except Marijuana/Hashish During the Past 30 Days for E1-E5's

Region/Days of Use	Service									
	Army		Navy		Marine Corps		Air Force		Total DoD	
Americas										
None	87.3	(1.9)	87.3	(2.3)	84.5	(1.4)	92.1	(1.2)	88.2	(1.0)
1-3	7.4	(1.0)	8.1	(1.6)	9.4	(0.6)	5.0	(1.2)	7.2	(0.7)
4-10	2.8	(0.4)	2.6	(0.8)	3.2	(0.4)	1.7	(0.2)	2.5	(0.3)
11-19	1.0	(0.2)	1.0	(0.3)	1.2	(0.7)	0.3	(0.2)	0.9	(0.1)
20-30	1.5	(0.4)	1.1	(0.1)	1.7	(0.3)	0.9	(0.3)	1.2	(0.2)
North Pacific										
None	87.2	(1.2)	90.8	(0.5)	88.3	(1.6)	94.2	(1.1)	89.9	(0.7)
1-3	6.4	(0.5)	5.9	(0.8)	7.5	(0.8)	4.0	(1.0)	5.9	(0.4)
4-10	3.1	(0.9)	1.8	(0.3)	2.4	(1.1)	1.2	(0.7)	2.2	(0.5)
11-19	1.3	(0.3)	0.3	(-)	0.8	(0.2)	0.5	(0.2)	0.8	(0.1)
20-30	2.0	(0.5)	1.2	(-)	0.9	(0.3)	0.1	(0.1)	1.1	(0.2)
Other Pacific										
None	84.7	(3.7)	88.2	(2.1)	88.7	(1.6)	91.4	(1.4)	88.3	(1.3)
1-3	8.7	(2.3)	7.9	(1.6)	7.8	(2.0)	5.6	(1.0)	7.5	(0.9)
4-10	2.3	(0.7)	2.1	(0.4)	1.9	(1.2)	1.3	(0.4)	1.9	(0.3)
11-19	2.0	(1.0)	0.9	(0.4)	0.3	(0.3)	1.3	(0.8)	1.1	(0.4)
20-30	2.3	(0.4)	0.9	(0.2)	1.3	(0.4)	0.4	(-)	1.1	(0.1)
Europe										
None	83.8	(1.3)	93.6	(0.6)	100.0	(0.0)	93.9	(0.8)	86.5	(1.0)
1-3	9.1	(0.7)	4.9	(0.7)	0.0	(**)	4.0	(0.8)	7.7	(0.6)
4-10	3.3	(0.5)	0.9	(0.1)	0.0	(**)	0.9	(0.2)	2.6	(0.3)
11-19	1.4	(0.3)	0.6	(0.1)	0.0	(**)	0.5	(0.1)	1.1	(0.2)
20-30	2.5	(0.4)	0.0	(**)	0.0	(**)	0.7	(0.2)	2.0	(0.3)
Total Worldwide										
None	86.1	(1.2)	87.5	(2.0)	85.4	(1.2)	92.4	(1.0)	88.0	(0.8)
1-3	7.9	(0.7)	8.0	(1.5)	9.0	(0.5)	4.8	(0.9)	7.3	(0.5)
4-10	3.0	(0.3)	2.5	(0.7)	3.0	(0.4)	1.5	(0.2)	2.5	(0.2)
11-19	1.2	(0.2)	1.0	(0.2)	1.1	(0.6)	0.4	(0.1)	0.9	(0.1)
20-30	1.8	(0.3)	1.0	(0.1)	1.5	(0.2)	0.8	(0.2)	1.3	(0.1)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

- Estimate rounds to zero.

** Sampling variance estimate is zero.

marijuana. Across all Services and regions of the world, use levels among E1-E5 personnel tend to be at least several times higher than among other pay grades. For the total DoD, 12 percent of E1-E5 personnel used any drug except marijuana during the past 30 days compared to 2 percent or less of other pay grades. Overall, levels of use are higher in Europe (11 percent) than other regions (8 to 9 percent), consistent with data presented above for use of any drug or marijuana. Finally, levels of use were far lower in the Air Force (5 percent) than in other branches of the service (10 to 12 percent), as was observed for any drug or marijuana.

While the Army showed highest levels of use for any drug or marijuana, for any drug except marijuana the highest levels of use were observed among Marine Corps personnel (12 percent), and by the Army (11 percent) followed by the Navy (10 percent) and the Air Force (5 percent). Within branches of the service, highest levels of use were seen among E1-E5 personnel in the Army in Europe (16 percent), the Navy (13 percent) and Marine Corps (16 percent) in the Americas, and the Air Force (9 percent) in the Other Pacific.

Since the prevalence of use of any drug except marijuana/hashish during the past 30 days was substantially higher among E1-E5 personnel than other pay grades, the frequency of their use within the past 30 days is shown in Table 5.10. Although 9 percent of all DoD personnel and 12 percent of all E1-E5 personnel worldwide used any drug except marijuana during the past 30 days (see Table 5.9), most personnel used the drugs only one to three days during that period. Seven percent of E1-E5 personnel worldwide used drugs other than marijuana 1-3 days, 3 percent 4-10 days, 1 percent 11-19 days and 1 percent 20-30 days during the past 30 days.

Heavy users (those using marijuana/hashish 20 or more days during the past 30 days) were more common in Europe (2 percent) than other regions (1 percent). Among Services the Army and Marine Corps (2 percent) reported heaviest use, but differences were not large. Among the four branches, heaviest users in the Army were seen in Europe and the Other Pacific, in the Navy in the North Pacific and the Americas in the Marine Corps and the Air Force in the Americas.

2. Use During the Past 12 Months

Patterns of use of any drug except marijuana/hashish during the past 12 months presented in Table 5.11 are similar to those in Table 5.9 for use during the past 30 days. On a regional basis use is highest in Europe and the

Table 5.9. Any Drug Use Except Marijuana/Hashish During the Past 30 Days

Region/Pay Grade	Service									
	Army		Navy		Marine Corps		Air Force		Total DoD	
Americas										
E1-E5	12.7	(1.9)	12.7	(2.3)	15.5	(1.4)	7.9	(1.2)	11.8	(1.0)
E6-E9	3.5	(0.7)	1.4	(0.8)	2.4	(0.1)	1.1	(0.4)	2.1	(0.4)
01-03	2.4	(1.1)	2.2	(1.1)	4.5	(2.4)	1.3	(0.6)	2.0	(0.6)
04-06	0.0	(**)	0.0	(**)	+	(+)	0.5	(0.6)	0.3	(0.3)
Total	9.5	(1.4)	9.9	(1.8)	12.7	(1.6)	5.2	(1.1)	8.7	(0.8)
North Pacific										
E1-E5	12.8	(1.2)	9.2	(0.5)	11.7	(1.6)	5.8	(1.1)	10.1	(0.7)
E6-E9	3.4	(0.6)	2.1	(1.0)	1.2	(0.3)	0.9	(0.4)	2.0	(0.3)
01-03	3.0	(1.5)	1.6	(1.7)	8.8	(2.9)	0.0	(**)	3.0	(0.9)
04-06	0.0	(**)	0.0	(**)	+	(+)	0.0	(**)	0.0	(**)
Total	9.8	(1.2)	6.9	(-)	9.6	(1.5)	4.3	(0.8)	7.8	(0.6)
Other Pacific										
E1-E5	15.3	(3.7)	11.8	(2.1)	11.3	(1.6)	8.6	(1.4)	11.7	(1.3)
E6-E9	0.0	(**)	1.7	(0.8)	0.0	(**)	1.6	(0.8)	1.2	(0.4)
01-03	3.8	(3.6)	0.8	(0.9)	0.0	(**)	1.3	(1.5)	1.4	(0.9)
04-06	0.0	(**)	1.7	(1.2)	+	(+)	1.5	(0.7)	1.0	(0.5)
Total	9.6	(4.4)	8.3	(1.5)	9.5	(1.0)	5.9	(1.7)	8.1	(1.2)
Europe										
E1-E5	16.2	(1.3)	6.4	(0.6)	0.0	(**)	6.1	(0.8)	13.5	(1.0)
E6-E9	2.8	(0.9)	2.2	(0.5)	+	(+)	1.2	(0.8)	2.3	(0.6)
01-03	2.0	(1.4)	1.9	(1.6)	+	(+)	1.1	(0.8)	1.7	(0.9)
04-06	4.1	(3.9)	0.0	(**)	+	(+)	2.1	(2.8)	2.3	(1.8)
Total	13.1	(1.1)	4.3	(0.2)	0.0	(**)	4.5	(0.9)	10.5	(0.8)
Total Worldwide										
E1-E5	13.9	(1.2)	12.5	(2.0)	14.6	(1.2)	7.6	(1.0)	12.0	(0.8)
E6-E9	3.2	(0.5)	1.4	(0.7)	2.1	(0.1)	1.2	(0.3)	2.1	(0.3)
W1-W4 ^a	1.2	(1.0)	0.0	(**)	+	(+)	*	(*)	1.0	(0.8)
01-03	2.4	(0.9)	2.1	(1.0)	4.7	(1.9)	1.2	(0.5)	2.0	(0.5)
04-06	0.6	(0.6)	0.1	(0.1)	0.0	(**)	0.7	(0.5)	0.5	(0.3)
Total	10.6	(1.0)	9.6	(1.6)	12.0	(1.3)	5.1	(0.8)	8.9	(0.6)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parenthesis. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

+ Fewer than 20 respondents.

** Sampling variance estimate is zero.

Table 5.8. Marijuana/Hashish Use During the Past 12 Months

Region/Pay Grade	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
Americas										
E1-E5	37.4	(3.1)	34.2	(1.7)	32.3	(1.6)	22.7	(1.5)	32.1	(1.1)
E6-E9	10.6	(1.5)	3.4	(1.2)	2.4	(2.5)	2.4	(1.2)	5.3	(0.7)
01-03	7.9	(1.9)	4.4	(2.8)	2.2	(1.2)	2.1	(0.6)	4.3	(0.9)
04-06	1.5	(1.6)	1.4	(1.6)	+	(+)	0.5	(0.4)	0.8	(0.4)
Total	28.3	(2.6)	26.5	(1.8)	25.8	(3.0)	14.4	(1.9)	23.5	(1.1)
North Pacific										
E1-E5	33.8	(0.6)	27.0	(2.9)	34.4	(2.4)	19.7	(0.9)	29.1	(0.8)
E6-E9	8.2	(2.2)	3.2	(-)	3.6	(1.6)	2.5	(0.1)	4.7	(0.9)
01-03	5.8	(2.9)	3.4	(-)	2.7	(2.6)	2.5	(1.4)	3.9	(1.2)
04-06	0.0	(**)	0.0	(**)	+	(+)	0.0	(**)	0.0	(**)
Total	25.7	(1.3)	19.6	(2.0)	27.4	(2.9)	14.7	(1.1)	22.2	(0.9)
Other Pacific										
E1-E5	43.2	(7.6)	28.1	(3.4)	38.9	(1.5)	26.1	(0.2)	32.5	(2.4)
E6-E9	7.5	(0.3)	5.7	(0.4)	3.9	(4.6)	2.6	(1.1)	5.1	(0.5)
01-03	7.6	(7.1)	2.3	(1.6)	6.2	(8.1)	3.8	(0.6)	3.9	(1.5)
04-06	6.8	(1.0)	0.7	(0.8)	+	(+)	1.5	(0.7)	3.0	(1.5)
Total	29.5	(9.5)	20.0	(2.2)	33.4	(0.7)	17.0	(1.8)	23.2	(2.2)
Europe										
E1-E5	44.7	(1.7)	19.4	(1.4)	30.3	(6.6)	18.4	(2.2)	37.8	(1.3)
E6-E9	9.0	(1.0)	5.2	(0.7)	+	(+)	1.6	(1.1)	6.6	(0.8)
01-03	6.2	(2.0)	7.7	(6.5)	+	(+)	2.3	(1.0)	4.9	(1.4)
04-06	2.0	(1.9)	0.0	(**)	+	(+)	0.0	(**)	0.7	(0.7)
Total	36.1	(1.4)	12.8	(-)	20.2	(6.6)	12.9	(2.5)	29.2	(1.2)
Total Worldwide										
E1-E5	39.7	(2.0)	33.4	(1.5)	33.0	(1.3)	22.0	(1.2)	32.9	(0.9)
E6-E9	10.0	(1.0)	3.7	(1.0)	2.6	(2.0)	2.3	(1.0)	5.5	(0.6)
W1-W4 ^a	5.4	(1.7)	0.0	(**)	+	(+)	*	(*)	4.8	(1.6)
01-03	7.4	(1.5)	4.3	(2.3)	2.4	(1.0)	2.2	(0.5)	4.3	(0.8)
04-06	2.0	(1.3)	1.1	(1.2)	0.0	(**)	0.5	(0.3)	0.9	(0.4)
Total	30.5	(1.7)	25.6	(1.6)	26.4	(2.4)	14.3	(1.5)	24.3	(0.9)

Note: Tabled values are percentages and represent estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

-Estimate rounds to zero.

+Fewer than 20 respondents.

** Informative standard error not available.

Table 5.7. Frequency of Marijuana/Hashish Use During the Past 30 Days for E1-E5's

Region/Days of Use	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
Americas										
None	72.0	(3.3)	82.5	(3.1)	78.5	(1.4)	84.1	(1.3)	79.3	(1.5)
1-3	11.6	(1.4)	8.4	(1.3)	8.6	(0.6)	8.1	(1.4)	9.3	(0.7)
4-10	5.8	(0.9)	3.7	(0.8)	3.9	(0.7)	2.9	(0.6)	4.1	(0.4)
11-19	3.7	(0.7)	1.6	(0.5)	3.6	(1.4)	2.2	(0.5)	2.6	(0.4)
20-30	6.8	(1.5)	3.9	(0.8)	5.4	(1.6)	2.7	(0.6)	4.6	(0.6)
North Pacific										
None	73.7	(0.3)	85.3	(0.6)	84.0	(3.2)	89.1	(0.3)	82.3	(0.8)
1-3	12.0	(1.1)	7.4	(1.1)	8.2	(1.1)	6.4	(0.7)	8.8	(0.5)
4-10	6.3	(1.2)	4.4	(0.4)	3.7	(1.0)	2.2	(0.1)	4.2	(0.5)
11-19	4.5	(0.6)	1.2	(-)	1.6	(0.5)	1.1	(0.1)	2.3	(0.2)
20-30	3.5	(1.1)	1.8	(-)	2.4	(0.7)	1.2	(0.3)	2.3	(0.4)
Other Pacific										
None	63.4	(9.7)	79.6	(2.8)	71.2	(1.9)	80.7	(1.7)	75.2	(2.7)
1-3	14.1	(1.6)	8.7	(0.9)	13.8	(1.4)	9.4	(0.1)	10.8	(0.7)
4-10	5.3	(1.4)	3.2	(0.5)	3.4	(1.3)	3.5	(0.3)	3.7	(0.5)
11-19	4.0	(2.0)	2.0	(0.4)	4.2	(0.6)	1.2	(0.6)	2.6	(0.5)
20-30	13.2	(4.7)	6.6	(1.4)	7.4	(1.4)	5.2	(0.7)	7.7	(1.3)
Europe										
None	60.8	(1.5)	87.4	(0.6)	74.9	(1.3)	88.9	(1.1)	68.1	(1.2)
1-3	13.8	(1.0)	7.0	(0.9)	19.6	(4.0)	4.9	(1.0)	11.6	(0.8)
4-10	8.0	(0.6)	2.4	(0.8)	0.0	(**)	2.9	(0.4)	6.6	(0.4)
11-19	6.2	(0.3)	1.3	(0.7)	0.0	(**)	1.2	(0.3)	4.9	(0.2)
20-30	11.2	(0.7)	1.9	(-)	5.4	(2.7)	2.1	(0.8)	8.8	(0.5)
Total Worldwide										
None	68.3	(2.1)	82.5	(2.8)	78.7	(1.2)	85.0	(1.1)	77.5	(1.2)
1-3	12.4	(0.9)	8.3	(1.2)	9.0	(0.5)	7.6	(1.1)	9.7	(0.5)
4-10	6.5	(0.6)	3.6	(0.7)	3.8	(0.6)	2.9	(0.4)	4.5	(0.3)
11-19	4.5	(0.5)	1.6	(0.4)	3.4	(1.1)	2.0	(0.4)	3.0	(0.3)
20-30	8.2	(1.0)	3.9	(0.7)	5.1	(1.3)	2.6	(0.5)	5.3	(0.5)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

- Estimate rounds to zero.

**Informative standard error not available.

Data presented in Table 5.6 show that worldwide, 22.5 percent of E1-E5 Department of Defense personnel used marijuana/hashish during the past 30 days. Figures for frequency of that use among E1-E5 personnel by Service and region are presented in Table 5.7. They show that among the 22.5 percent of users during the past 30 days worldwide, almost 10 percent used marijuana/hashish 1-3 days a month, 5 percent 4-10 days, 3 percent 11-19 days, and 5 percent 20-30 days during the past 30 days. Thus, while users are more likely to use marijuana/hashish 1-3 times compared with other frequencies, there are also substantial percentages of military personnel who use marijuana/hashish more than 1-3 times per month. Heaviest users, those who used marijuana/hashish 20-30 days during the past 30 days, are overall most prevalent in the Army (8 percent) compared with other branches of the service. Regional comparisons show heaviest use for the Army in the Other Pacific (13 percent) and Europe (11 percent), and in the Other Pacific for the other Services (Navy, 7 percent; Marine Corps, 7 percent; Air Force, 5 percent).

2. Use During Past 12 Months

The patterns of use of marijuana/hashish during the past 12 months by service, region, and pay grade are presented in Table 5.8. The patterns are similar to those observed for use during the past 30 days presented in Table 5.6. Overall, the prevalence of use is higher in Europe than other regions, substantially higher among E1-E5 personnel than other pay grades, and highest among Army personnel, intermediate among Marine Corps and Navy personnel, and lowest among Air Force personnel. Within Service, highest prevalence levels were seen among E1-E5 personnel in the Army in Europe (16 percent), and among the Navy (13 percent), the Marine Corps (11 percent) and the Air Force (8 percent) in the Other Pacific.

E. Use of Any Drug Except Marijuana: Region and Pay Grade Comparisons

Since the use of marijuana/hashish is high relative to the use of other drugs, summary measures of total drug use may yield a somewhat misleading picture. Attention now shifts to an examination of the prevalence of use of any drug except marijuana during the past 30 days and past 12 months. It must be remembered that this group of drugs is a diverse one, including drugs such as heroin and cocaine as well as prescription drugs used for nonmedical purposes.

1. Use During the Past 30 Days

The prevalence of use of any drug except marijuana displayed in Table 5.9 shows overall patterns similar to those observed for any drug or for

Table 5.6. Marijuana/Hashish Use During the Past 30 Days

Region/Pay Grade	Service								Total DoD
	Army		Navy		Marine Corps		Air Force		
Americas									
E1-E5	28.0	(3.3)	17.5	(3.1)	21.5	(1.4)	15.9	(1.3)	20.7 (1.5)
E6-E9	7.3	(0.8)	2.3	(0.7)	2.4	(2.5)	1.4	(0.6)	3.6 (0.4)
01-03	3.8	(1.5)	0.9	(1.0)	0.0	(**)	0.6	(0.3)	1.6 (0.5)
04-06	1.5	(1.6)	0.0	(**)	+	(+)	0.0	(**)	0.3 (0.3)
Total	20.8	(2.5)	13.6	(2.3)	17.2	(2.5)	9.9	(1.4)	15.1 (1.1)
North Pacific									
E1-E5	26.3	(0.3)	14.7	(0.6)	16.0	(3.2)	10.9	(0.3)	17.7 (0.8)
E6-E9	3.0	(0.8)	1.6	(0.5)	1.2	(0.3)	0.4	(0.4)	1.6 (0.4)
01-03	2.9	(2.1)	0.0	(**)	2.7	(2.6)	1.2	(1.2)	1.9 (0.9)
04-06	0.0	(**)	0.0	(**)	+	(+)	0.0	(**)	0.0 (**)
Total	19.3	(1.3)	10.6	(0.3)	12.7	(2.4)	7.9	(0.3)	13.3 (0.7)
Other Pacific									
E1-E5	36.6	(9.7)	20.4	(2.8)	28.8	(1.9)	19.3	(1.7)	24.8 (2.7)
E6-E9	3.9	(0.6)	3.7	(0.3)	2.6	(3.1)	1.6	(0.2)	3.1 (0.3)
01-03	0.0	(**)	0.0	(**)	0.0	(**)	2.6	(0.5)	0.8 (0.1)
04-06	3.4	(0.5)	0.7	(0.8)	+	(+)	0.0	(**)	1.4 (0.8)
Total	23.7	(10.1)	14.3	(1.9)	24.5	(0.4)	12.4	(2.6)	17.3 (2.4)
Europe									
E1-E5	39.2	(1.5)	12.6	(0.6)	25.1	(1.3)	11.1	(1.1)	31.9 (1.2)
E6-E9	6.0	(0.8)	2.7	(-)	+	(+)	0.8	(0.8)	4.3 (0.6)
01-03	2.9	(1.5)	0.0	(**)	+	(+)	1.1	(0.8)	2.1 (0.9)
04-06	2.0	(1.9)	0.0	(**)	+	(+)	0.0	(**)	0.7 (0.7)
Total	31.2	(1.2)	7.8	(1.1)	16.8	(0.9)	7.7	(1.4)	24.3 (1.0)
Total Worldwide									
E1-E5	31.7	(2.1)	17.5	(2.8)	21.3	(1.2)	15.0	(1.1)	22.5 (1.2)
E6-E9	6.6	(0.5)	2.4	(0.6)	2.2	(2.0)	1.3	(0.5)	3.6 (0.3)
W1-W4 ^a	3.7	(1.6)	0.0	(**)	+	(+)	*	(*)	3.1 (1.3)
01-03	3.5	(1.2)	0.8	(0.8)	0.3	(0.3)	0.7	(0.3)	1.6 (0.5)
04-06	1.7	(1.2)	0.1	(0.1)	0.0	(**)	0.0	(**)	0.4 (0.3)
Total	23.9	(1.7)	13.4	(2.0)	17.1	(2.0)	9.6	(1.1)	16.5 (0.9)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

+ Fewer than 20 respondents.

** Informative standard error not available.

Table 5.5. Any Drug Use During the Past 12 Months

Region/Pay Grade	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
Americas					
E1-E5	39.2 (3.2)	37.1 (2.0)	36.6 (3.0)	25.3 (1.9)	34.7 (1.2)
E6-E9	13.0 (1.6)	5.1 (0.9)	4.8 (2.6)	3.5 (1.1)	7.1 (0.7)
O1-O3	8.8 (2.1)	5.4 (2.3)	6.7 (3.5)	3.4 (0.6)	5.6 (1.0)
O4-O6	1.5 (1.6)	1.4 (1.6)	+ (+)	1.5 (0.6)	1.4 (0.6)
Total	30.0 (2.6)	29.1 (1.9)	29.7 (3.9)	16.5 (2.2)	25.8 (1.2)
North Pacific					
E1-E5	37.5 (0.5)	29.4 (4.1)	36.8 (3.1)	21.2 (1.2)	31.7 (1.1)
E6-E9	10.6 (1.7)	4.2 (-)	3.6 (1.6)	3.3 (0.4)	6.0 (0.8)
O1-O3	8.0 (2.6)	5.1 (1.7)	8.9 (2.9)	3.6 (2.3)	6.5 (1.3)
O4-O6	0.0 (**)	0.0 (**)	+ (+)	0.0 (**)	0.9 (0.9)
Total	28.9 (1.3)	21.6 (2.7)	29.6 (3.4)	16.0 (1.4)	24.4 (1.1)
Other Pacific					
E1-E5	46.8 (8.7)	32.0 (3.1)	40.5 (1.3)	29.3 (1.2)	35.8 (2.5)
E6-E9	8.3 (0.4)	7.1 (0.7)	3.9 (4.6)	4.7 (0.6)	6.5 (0.6)
O1-O3	7.6 (7.1)	3.1 (1.6)	6.2 (8.1)	5.1 (1.7)	4.7 (1.6)
O4-O6	6.8 (1.0)	2.4 (1.8)	0.0 (**)	3.0 (1.5)	4.0 (1.4)
Total	31.9 (10.4)	23.0 (2.1)	34.7 (0.9)	19.7 (2.4)	25.7 (2.4)
Europe					
E1-E5	46.8 (1.6)	21.8 (2.7)	30.3 (6.6)	21.9 (3.0)	40.2 (1.3)
E6-E9	10.8 (1.6)	5.7 (0.3)	+ (+)	2.8 (1.2)	8.1 (1.1)
O1-O3	6.9 (1.9)	7.7 (6.5)	+ (+)	3.3 (1.2)	5.7 (1.2)
O4-O6	4.1 (3.9)	0.0 (**)	+ (+)	2.1 (2.8)	2.3 (1.8)
Total	38.1 (1.4)	14.2 (0.7)	20.2 (6.6)	15.7 (3.2)	31.4 (1.3)
Total Worldwide					
E1-E5	41.7 (2.1)	36.3 (1.7)	36.8 (2.4)	24.7 (1.6)	35.5 (1.0)
E6-E9	12.2 (1.1)	5.3 (0.8)	4.5 (2.0)	3.5 (0.8)	7.2 (0.5)
W1-W4 ^a	5.8 (1.6)	0.0 (**)	+ (+)	* (*)	5.1 (1.5)
O1-O3	8.4 (1.7)	5.3 (1.9)	6.9 (3.0)	3.4 (0.5)	5.6 (0.8)
O4-O6	2.2 (1.4)	1.3 (1.2)	0.7 (0.7)	1.5 (0.6)	1.6 (0.5)
Total	32.4 (1.8)	28.1 (1.7)	29.9 (3.2)	16.4 (1.8)	26.6 (1.0)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

* Fewer than 20 respondents.

** Informative standard error not available.

Table 5.14. Number of Drugs Used During the Past 30 Days for E1-E5's

Region/Number of Drugs	Service								Total DoD
	Army		Navy		Marine Corps		Air Force		
Americas									
1 Drug	19.8	(1.9)	11.1	(1.6)	13.5	(0.7)	13.8	(1.3)	14.7 (0.9)
2 Drugs	5.6	(1.2)	5.1	(1.2)	5.6	(0.4)	3.2	(0.5)	4.8 (0.6)
3 Drugs	2.0	(0.5)	2.1	(0.5)	3.3	(0.8)	1.2	(0.2)	2.0 (0.3)
4 or More Drugs	3.1	(0.7)	2.6	(0.4)	3.2	(-)	0.8	(0.3)	2.4 (0.3)
Total	30.4	(3.4)	20.9	(3.4)	25.6	(1.9)	19.0	(1.8)	23.8 (1.6)
North Pacific									
1 Drug	19.7	(0.4)	9.3	(1.2)	13.3	(1.5)	8.5	(0.3)	13.5 (0.4)
2 Drugs	4.9	(0.6)	4.1	(0.2)	3.9	(0.5)	2.3	(1.0)	3.8 (0.4)
3 Drugs	2.1	(0.6)	1.8	(0.3)	1.4	(0.4)	1.1	(0.2)	1.6 (0.2)
4 or More Drugs	3.2	(1.0)	1.5	(-)	2.4	(0.9)	1.0	(0.5)	2.1 (0.4)
Total	29.9	(0.4)	16.7	(1.1)	20.9	(2.0)	12.8	(0.8)	21.0 (0.6)
Other Pacific									
1 Drug	27.5	(8.1)	17.2	(1.3)	21.5	(0.6)	17.2	(2.0)	20.0 (2.0)
2 Drugs	4.8	(1.5)	4.1	(1.3)	4.3	(0.1)	3.3	(0.9)	4.1 (0.6)
3 Drugs	3.1	(0.7)	1.7	(0.5)	2.3	(0.5)	1.0	(0.7)	1.9 (0.4)
4 or More Drugs	4.6	(0.3)	1.7	(0.4)	2.9	(0.8)	1.3	(0.4)	2.4 (0.3)
Total	40.0	(10.6)	24.7	(2.9)	31.0	(2.0)	22.8	(2.6)	28.4 (2.9)
Europe									
1 Drug	27.7	(1.0)	9.8	(0.6)	25.1	(1.3)	11.2	(1.9)	23.4 (0.8)
2 Drugs	7.7	(0.8)	2.5	(0.7)	0.0	(**)	2.1	(0.2)	6.2 (0.6)
3 Drugs	2.8	(0.4)	1.3	(0.3)	0.0	(**)	0.7	(0.2)	2.2 (0.3)
4 or More Drugs	3.7	(0.6)	0.9	(0.8)	0.0	(**)	0.6	(0.1)	2.9 (0.4)
Total	41.8	(1.5)	14.5	(0.2)	25.1	(1.3)	14.6	(1.9)	34.6 (1.2)
Total Worldwide									
1 Drug	22.5	(1.2)	11.4	(1.5)	14.1	(0.5)	13.3	(1.1)	16.2 (0.7)
2 Drugs	6.2	(0.8)	5.0	(1.0)	5.2	(0.3)	3.0	(0.4)	5.0 (0.4)
3 Drugs	2.3	(0.4)	2.0	(0.5)	3.0	(0.7)	1.1	(0.2)	2.0 (0.2)
4 or More Drugs	3.3	(0.4)	2.5	(0.4)	3.0	(0.1)	0.8	(0.2)	2.4 (0.2)
Total	34.3	(2.2)	20.9	(3.1)	25.3	(1.5)	18.1	(1.4)	25.6 (1.3)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

-Estimate rounds to zero.

** Informative standard error not available.

Table 5.15. Number of Drugs Used During the Past 12 Months for E1-E5's

Region/Number of Drugs	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
Americas										
1 Drug	21.3	(1.8)	17.2	(0.9)	18.8	(1.7)	16.4	(1.3)	18.4	(0.7)
2 Drugs	8.4	(1.2)	7.9	(0.4)	7.8	(0.5)	4.8	(0.4)	7.2	(0.4)
3 Drugs	3.9	(0.5)	3.9	(0.8)	4.0	(0.7)	1.7	(0.4)	3.4	(0.3)
4 or More Drugs	5.6	(1.2)	8.1	(1.0)	6.0	(-)	2.4	(0.3)	5.7	(0.5)
Total	39.2	(3.2)	37.1	(2.0)	36.6	(3.0)	25.3	(1.9)	34.7	(1.2)
North Pacific										
1 Drug	22.2	(1.4)	15.4	(2.0)	16.9	(0.5)	11.9	(1.4)	17.0	(0.7)
2 Drugs	7.0	(0.4)	7.0	(2.8)	7.2	(1.3)	4.8	(1.4)	6.4	(0.7)
3 Drugs	2.8	(0.6)	2.6	(0.1)	5.0	(1.0)	2.1	(0.3)	3.1	(0.3)
4 or More Drugs	5.5	(1.2)	4.3	(0.6)	7.7	(1.4)	2.5	(0.6)	5.1	(0.6)
Total	37.5	(0.5)	29.4	(4.1)	36.8	(3.1)	21.2	(1.2)	31.7	(1.1)
Other Pacific										
1 Drug	27.9	(4.5)	17.2	(1.0)	25.5	(0.2)	19.3	(1.7)	21.2	(1.3)
2 Drugs	6.9	(1.5)	6.7	(1.6)	5.4	(0.1)	5.0	(0.7)	6.1	(0.7)
3 Drugs	2.9	(0.5)	3.8	(1.1)	3.5	(1.0)	1.9	(0.1)	3.1	(0.5)
4 or More Drugs	9.1	(3.2)	4.2	(0.7)	6.1	(0.5)	3.1	(-)	5.3	(0.8)
Total	46.8	(8.7)	32.0	(3.1)	40.5	(1.3)	29.3	(1.2)	35.8	(2.5)
Europe										
1 Drug	26.9	(0.8)	13.3	(0.9)	25.1	(1.3)	15.4	(2.8)	23.9	(0.8)
2 Drugs	8.2	(0.6)	3.9	(1.2)	+	(+)	2.7	(0.2)	6.8	(0.5)
3 Drugs	3.9	(0.5)	2.2	(0.3)	0.0	(**)	1.7	(0.4)	3.3	(0.4)
4 or More Drugs	7.8	(1.0)	2.4	(0.8)	0.0	(**)	2.1	(0.5)	6.3	(0.7)
Total	46.8	(1.6)	21.8	(2.7)	30.3	(6.6)	21.9	(3.0)	40.2	(1.3)
Total Worldwide										
1 Drug	23.3	(1.2)	17.1	(0.8)	19.1	(1.4)	16.1	(1.1)	19.3	(0.6)
2 Drugs	8.2	(0.8)	7.7	(0.4)	7.6	(0.5)	4.5	(0.3)	7.1	(0.3)
3 Drugs	3.9	(0.3)	3.9	(0.7)	4.0	(0.6)	1.8	(0.3)	3.4	(0.3)
4 or More Drugs	6.4	(0.8)	7.7	(0.9)	6.2	(0.2)	2.4	(0.2)	5.7	(0.4)
Total	41.7	(2.1)	36.3	(1.7)	36.8	(2.4)	24.7	(1.6)	35.5	(1.0)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

** Informative standard error not available.

- Estimate rounds to zero.

+ Information estimate not available.

H. Combined Use of Drugs and Alcohol

Drug use and alcohol use often occur together and can result in more negative effects than either used alone. The prevalence of combined alcohol and drug use was investigated in two ways: First, by the use among E1-E5 personnel of alcohol with marijuana and with other drugs; and second, by contrasting the number of drugs used during the past year with drinking levels for E1-E5 personnel. As with the measure of multiple drug use, the latter measure of combined use of drugs and alcohol does not describe simultaneous use but rather the tendency of drug users to also have used alcohol within the past year.

The prevalence of combined use of any alcohol with specific types of drugs (marijuana, any drug except marijuana, and any drug) among E1-E5 personnel is shown in Table 5.16. For total DoD personnel, 26 percent report combined drug and alcohol use. Of these, most combined the use of marijuana with alcohol (25 percent), although notable proportions combined use with drugs other than marijuana (10 percent). Combining any drug and any alcohol use is particularly prevalent among Army personnel (32 percent), lower among Navy and Marine Corps personnel (23 to 26 percent) and lowest among Air Force personnel (17 percent). This pattern is also seen for the use of marijuana with alcohol or any drug except marijuana with alcohol.

The number of drugs used during the past year is contrasted among drinking types for E1-E5 personnel in Table 5.17. The columns are percentage distributions of the number of drugs used among the various drinking types. The patterns of drug and alcohol use show a clear relationship between the use of drugs during the past 12 months and use of larger amounts of alcohol. For E1-E5's, the use of one or more drugs occurred for 8 percent of abstainers, 25 percent of infrequent-light drinkers, 30 percent of moderate-heavy drinkers and 60 percent of heavy drinkers.

Drug use among heavy alcohol users is particularly prevalent among Army personnel (70 percent), lower among Navy and Marine Corps personnel (57 to 60 percent) and lowest among Air Force personnel (44 percent). Similarly, multiple drug users are particularly prevalent among heavy alcohol users in the Army (43 percent), and lower among Navy and Marine Corps personnel (36 to 38 percent), and lowest among Air Force personnel (20 percent). However, it must be remembered that the use of alcohol with even one drug can itself be considered multiple drug use.

Table 5.16. Combined Use of Any Alcohol With Drugs for E1-E5s

Drug	Service									
	Army		Navy		Marine Corps		Air Force		Total DoD	
Marijuana	31.0	(2.0)	24.4	(2.1)	21.7	(0.8)	16.3	(1.0)	24.6	(1.0)
Any Drug Except Marijuana	11.4	(1.2)	12.4	(1.5)	10.1	(0.4)	4.9	(0.6)	10.0	(0.6)
Any Drug	32.4	(2.1)	25.9	(2.2)	22.8	(0.7)	16.9	(1.1)	25.7	(1.0)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

Estimates indicate reports of ever using alcohol with drugs.

Table 5.17. Number of Drugs Used During the Past Year by Drinking Levels for E1-E5's

Service/Number of Drugs Used	Abstainers	Infrequent/ Light	Moderate	Moderate/ Heavy	Heavy
Army					
None	90.9	73.7	63.7	49.8	29.8
1	6.5	19.3	24.3	28.8	27.6
2	1.2	3.5	7.1	10.5	14.7
3	0.6	0.9	2.7	4.4	9.3
4	0.1	0.3	1.3	2.5	6.2
5 or more	0.7	2.3	0.8	4.0	12.4
Navy					
None	91.7	67.3	73.3	58.1	42.8
1	6.0	18.3	16.5	18.6	19.6
2	1.0	6.2	5.5	9.5	12.7
3	0.1	2.7	2.2	6.0	5.9
4	0.0	1.2	0.7	3.1	5.6
5 or more	1.0	4.3	1.8	4.8	13.4
Marine Corps					
None	88.3	81.5	63.4	58.3	40.1
1	7.1	10.5	22.7	22.4	23.5
2	2.8	3.9	7.8	8.3	12.0
3	0.0	1.3	4.0	4.4	8.3
4	0.0	1.4	0.2	3.7	7.4
5 or more	1.8	1.3	2.0	2.9	8.7
Air Force					
None	94.4	86.8	76.7	64.5	56.5
1	4.7	10.1	15.2	23.9	23.6
2	0.8	2.2	5.0	5.2	8.7
3	0.0	0.4	1.2	2.2	6.2
4	0.0	0.4	0.8	2.1	1.6
5 or more	0.1	0.1	1.1	2.1	3.4
Total DoD					
None	91.8	75.2	69.8	56.6	39.6
1	5.9	16.1	19.6	23.9	24.0
2	1.2	4.2	6.2	8.7	12.8
3	0.2	1.4	2.3	4.3	7.6
4	0.1	0.7	0.9	2.7	5.3
5 or more	0.7	2.4	1.2	3.7	10.7

Note: Tabled entries are column percentages for each service.

I. Demographic Characteristics of Drug Users

Discussion in this chapter has focused on the prevalence of drug use and type of drug use among military personnel of the four Services and pay grades. Consideration is now given to the demographic characteristics of personnel who have used any drug during the past year. Demographic characteristics presented in Table 5.18 include sex, race/ethnicity, educational level, age, marital/accompaniment status, pay grade, time on active duty, region, and time at present duty station. Both row and column percentages are presented; the percentages reported under "Users" represent row percentages, or the percentage of personnel of each demographic category who are drug users, while the percentages reported under "Total" are column percentages showing the overall distributions of the demographic characteristics.

For the total DoD, there is no difference in the percentage of users among males and females, and small differences due to race with members of the nonspecified "other" race least likely to use. For the remaining characteristics in the table, the likelihood of use is greatest among those with less than a high school education, those aged 17-20, those not married, those of pay grade E1-E5, those on active duty 4 years or less (particularly 1 to 2 years), those stationed in Europe, and those at their present duty station 2 years or less. These same patterns also occur for personnel of the four Services, with minor exceptions. First, males in the Navy and females in the Marine Corps are more likely to be drug users. Second, Navy personnel stationed in the Americas are more likely to be users, and Marine Corps and Air Force personnel in the Other Pacific.

The time on active duty profile is interesting in that it shows an increase in use in the second year of service over the first year and then a gradual tapering off over the next 2 years. This pattern, which holds for all Services, is in need of further study to understand its causes. It may be that there is some type of drug use phenomenon occurring after personnel enter the Service. For example, they may locate an inexpensive source of drugs or become confronted with increasing social pressures to use drugs but then taper off their use after a period of time. On the other hand, this pattern may simply reflect different levels of use associated with age and education noted earlier in Table 5.18. The current analysis does not permit an unequivocal resolution of this issue.

Table 5.18. Drug Use During Past 12 Months by Socio-Demographic Characteristics

Socio-Demographic Characteristics	Service/Drug Use Past 12 Months									
	Army		Navy		Marine Corps		Air Force		Total DoD	
	Users	Total	Users	Total	Users	Total	Users	Total	Users	Total
Sex										
Male	32.2	87.7	28.5	94.2	29.5	96.0	16.2	88.9	26.6	90.5
Female	33.2	12.3	22.6	5.8	39.3	4.0	18.4	11.1	26.7	9.5
Race/Ethnicity										
White	32.3	60.4	28.6	77.4	30.2	72.3	15.8	78.2	25.9	71.0
Black	33.4	24.9	30.0	10.7	27.8	14.7	17.7	12.8	29.0	16.8
Hispanic	32.3	9.2	29.3	5.5	30.6	9.1	21.9	4.9	29.5	7.0
Other	27.1	5.5	18.2	6.4	29.8	3.9	17.9	4.1	22.3	5.2
Education										
Less than high school graduate	50.9	5.3	41.4	4.3	55.5	4.8	42.3	0.7	48.0	3.7
High school graduate or GED	39.4	50.4	31.6	56.0	30.5	58.0	24.4	33.3	33.0	47.8
Beyond high school, no 4 year degree	26.3	30.5	26.7	29.5	29.4	27.4	17.0	42.6	23.3	33.3
College graduate or higher	12.8	13.8	2.9	10.3	14.7	9.8	3.1	23.4	7.9	15.2
Age										
17-20	51.6	23.4	38.2	31.3	38.9	30.8	36.1	12.2	42.9	23.0
21-24	40.5	31.4	37.8	29.3	36.9	39.4	26.8	27.6	35.9	30.5
25-30	23.9	25.3	21.3	19.6	16.4	18.5	12.6	25.4	19.3	23.2
31 or older	7.6	19.9	4.7	19.8	2.8	11.4	4.0	34.7	5.2	23.3
Marital/Accompaniment Status										
Not married	43.9	49.6	37.4	59.0	36.8	56.8	26.4	36.3	37.4	49.0
Married, spouse not present at duty station	26.8	9.1	22.5	7.4	28.8	6.0	16.5	3.7	24.2	6.9
Married, spouse present at duty station	19.7	41.3	13.1	33.6	19.5	37.2	10.3	60.0	14.8	44.1
Paygrade										
E1-E5	41.7	70.5	36.3	74.1	36.8	78.3	24.7	61.5	35.5	69.6
E6-E9	12.2	17.4	5.3	17.3	4.5	13.0	3.5	18.3	7.2	17.2
W1-W4	5.9	2.3	0.0	0.4	+	+	*	*	5.1	1.0
O1-O3	8.3	7.4	5.3	5.4	6.9	6.2	3.4	12.4	5.6	8.2
O4-O6	2.3	2.4	1.3	2.8	0.7	1.9	1.5	7.7	1.6	4.0
Time on Active Duty										
1 year or less	40.3	16.6	32.8	28.0	36.7	12.9	25.4	6.9	34.9	16.6
>1 to 2 years	48.2	16.8	45.4	12.2	38.8	20.2	29.5	12.7	41.9	14.7
>2 to 3 years	43.7	13.4	37.6	11.1	34.0	16.5	28.8	10.4	37.5	12.2
>3 to 4 years	36.8	7.2	37.3	7.4	40.5	13.0	24.9	8.5	34.0	8.2
>4 to 9 years	27.0	27.9	26.1	22.3	23.1	23.1	15.4	26.3	23.1	25.5
10 years or more	8.4	18.1	3.5	19.0	7.6	14.3	4.9	35.2	5.7	22.8

(continued)

Table 5.18 (continued)

Socio-Demographic Characteristics	Service/Drug Use Past 12 Months									
	Army		Navy		Marine Corps		Air Force		Total DoD	
	Users	Total	Users	Total	Users	Total	Users	Total	Users	Total
Region										
Americas	29.9	63.5	29.1	88.8	29.7	79.6	16.4	78.3	25.7	75.9
North Pacific	28.9	4.3	21.5	2.7	29.7	12.8	16.0	4.6	24.4	4.7
Other Pacific	31.8	2.3	23.0	6.0	34.6	6.4	19.7	3.4	25.7	4.0
Europe	38.0	29.9	14.4	2.4	20.2	1.2	15.6	13.7	31.3	15.4
Time at Present Duty Station										
6 months or less	32.8	30.0	28.2	40.7	32.6	23.8	17.7	20.2	28.2	29.6
7 to 12 months	35.8	27.4	31.3	17.7	30.0	27.7	21.4	16.5	31.1	21.8
>1 to 2 years	34.0	25.4	29.8	24.6	30.0	26.3	17.5	28.5	27.5	26.1
>2 to 3 years	26.6	12.1	21.7	12.6	27.5	13.3	16.8	16.9	22.1	13.7
More than 3 years	15.9	5.1	24.4	4.4	25.2	8.9	8.3	17.9	13.5	8.8
Total	32.3	-	28.1	-	29.9	-	16.4	-	26.5	100.0

Note: For each Service, values under the "Total" heading are column percentages showing the distribution across each characteristic within that Service. The values under the "Users" heading are row percentages showing the proportion of persons with each row's characteristic who also used drugs during the past 12 months.

* Fewer than 20 respondents.

* Not applicable.

J. Summary of Drug Use Prevalence

Military personnel from the four Services engage in the use of drugs for nonmedical purposes. The extent and nature of this use has important implications for the performance and safety of military personnel as well as their health and social life. The prevalence of use of ten individual drugs or classes of drugs during the past 30 days, past 12 months, or ever was investigated. These drugs include: marijuana or hashish, PCP, LSD and other hallucinogens, cocaine, amphetamines and other stimulants, tranquilizers, barbiturates and other sedatives, heroin, other opiates, and other drugs such as over-the-counter drugs and inhalants. In addition, indices of use of any drug, any drug except marijuana/hashish, and multiple drugs were developed. This summary highlights major findings.

1. Basic Patterns of Drug Use

- Overall, 42 percent of DoD personnel have ever used one or more drugs for nonmedical purposes, including 27 percent who have used within the past 12 months and 19 percent within the past 30 days.
- Marijuana is the single drug most frequently used for non-medical purposes. Of all military personnel, 40 percent have used during their lifetime, 24 percent have used within the past 12 months and 17 percent have used within the past 30 days.
- For any drug besides marijuana, use is reported by 22 percent during their lifetime, by 14 percent within the past 12 months and by 9 percent within the past 30 days.
- Among the Services, the Air Force consistently shows lowest levels of any drug use during lifetime (32 percent), past 12 months (16 percent) or past 30 days (12 percent).
- The Army, Navy and Marine Corps personnel show similar lifetime use of any drug (45-46 percent).
- The Army shows highest use of any drug during the past 12 months (32 percent) with the Marine Corps (30 percent) and Navy (28 percent) only slightly lower.
- The Army shows highest use of any drug during the past 30 days (26 percent) followed by the Marine Corps (21 percent) and Navy (16 percent).
- Military personnel in pay grade E1-E5 are at least five times more likely to use drugs than personnel in other pay grades. During the past 12 months 36 percent used one or more drugs compared to 7 percent or less for other grades; during the past

30 days 26 percent used one or more drugs compared to 5 percent or less for other pay grades.

- Patterns of use among E1-E5's are similar to those observed for Total DoD although levels of use are higher.
- Different use patterns exist among the Services for E1-E5s for the various time periods. For "any drug," lifetime use is similar in the Army, Navy, and Marine Corps (54-55 percent) and lower in the Air Force (45 percent). However, 12 month and 30 day use is highest in the Army (42 and 34 percent, respectively), about the same in the Navy and Marine Corps, and lowest in the Air Force.
- Among E1-E5's the use pattern for marijuana across time periods is the same as that observed for any drug. Levels of use are particularly high in the Army. Notably, 40 percent indicate use during the past 12 months and 32 percent during the past 30 days.

2. Use of Any Drug: Region and Pay Grade Comparisons

- Regional comparisons show overall drug use for the past 30 days is greatest in Europe (27 percent), followed by Other Pacific (20 percent), Americas (18 percent) and North Pacific (16 percent).
- Among the Services, greatest use of any drug during the past 30 days occurs in Europe for the Army (34 percent) and in the Other Pacific for the Navy (18 percent), the Marines (26 percent), and the Air Force (15 percent).
- Among E1-E5's, use of any drug during the past 30 days is greatest in Europe for Army (42 percent), and in the Other Pacific for the Navy (25 percent), Marine Corps (31 percent), and Air Force (23 percent).
- 12 month data generally follow the pattern of the 30 day data. Most frequent use of any drug occurs among E1-E5's in Europe for the Army (47 percent), in the Americas for the Navy (37 percent) and in the Other Pacific for the Marine Corps (41 percent) and Air Force (29 percent).

3. Use of Marijuana/Hashish: Region and Pay Grade Comparisons

- Use of marijuana/hashish during the past 30 days and past 12 months follows the same pattern noted for any drug use. During these time periods, respectively, use is highest among E1-E5 Army personnel in Europe (39 and 45 percent); among Navy personnel in the Other Pacific (20 percent--30 day use) and Americas (34 percent--12 month use); among Marine Corps personnel (29 and 39 percent) and Air Force personnel (19 and 26 percent) in the Other Pacific.

- Among all E1-E5's 10 percent used marijuana/hashish 1-3 days during the past 30 days, 4 percent 4-10 days, 3 percent 11-19 days, and 5 percent 20-30 days.
- E1-E5's using marijuana 11 or more of the past 30 days occurs most often for the Army (17 percent) in Europe and the Other Pacific; for the Navy (9 percent), the Marine Corps (12 percent) and the Air Force (6 percent) in the Other Pacific.

4. Use of Any Drug Except Marijuana: Region and Pay Grade Comparisons

- Use of any drug except marijuana/hashish follows a pattern similar to that of marijuana use. During the past 30 days and past 12 months, respectively, for E1-E5's the highest frequency of use occurred for the Army in Europe (16 and 22 percent) and the Other Pacific (15 and 22 percent), for the Navy in the Americas (13 and 23 percent) for the Marine Corps in the Americas (16 percent) and North Pacific (22 percent) and for the Air Force in the Other Pacific (9 and 13 percent).
- Among all E1-E5's, 7 percent used any drug except marijuana/hashish 1-3 days during the past 30 days, 2 percent 4-10 days, 1 percent 11-19 days and 1 percent 20-30 days.
- E1-E5's using 11 or more of the past 30 days occurs most often for the Army (4 percent) in Europe and the Other Pacific; the other Services all show less than 3 percent use with minor regional differences.

5. Drugs Used Most Often Excluding Marijuana: Regional Comparisons

- Amphetamines, cocaine, LSD/hallucinogens, and other drugs are the most frequently used drugs other than marijuana.
- Levels of use of these drugs for E1-E5 personnel during the past 12 months are 10 percent for amphetamines, 9 percent for cocaine, 7 percent for LSD/hallucinogens, and 6 percent for other drugs; comparable figures for 30 days are 6 percent, 4 percent, 3 percent, and 4 percent.
- Use of most high use drugs other than marijuana/hashish is higher in Europe and America for use during the past 12 months and higher in Europe and the other Pacific for use during the past 30 days.

6. Multiple Drug Use

- Single drug use is the most frequent pattern of drug use, although multiple drug use is substantial. During the past 30 days, 16 percent of E1-E5's used one drug and 9 percent used two or more; during the past 12 months, 19 percent used one drug and 16 percent two or more.

- Multiple drug use during the past 30 days (i.e., two or more drugs) is somewhat more prevalent in Europe than other regions (11 percent versus 8-9 percent), and less prevalent among Air Force personnel than other branches of the Service; for multiple drug use during the past 12 months, there is little difference among regions (15-16 percent).

7. Combined Use of Drugs and Alcohol

- Individuals who use drugs may use alcohol at the same time. Overall 26 percent of E1-E5's reported using drugs and alcohol together; 25 percent combined marijuana and alcohol use, and 10 percent combined drugs other than marijuana with alcohol. The information on combined use was not placed in a time context, so it cannot be readily compared with other prevalence data.
- There is a clear relationship between the use of drugs during the past 12 months and use of larger amounts of alcohol. For E1-E5's, use of one or more drugs occurred for 8 percent of abstainers, 25 percent of infrequent-light drinkers, 30 percent of moderate drinkers, 43 percent of moderate-heavy drinkers and 60 percent of heavy drinkers.

8. Demographic Characteristics of Drug Users

- The likelihood of drug use is greatest among those with less than a high school education (48 percent), those aged 17-20 (43 percent), those not married (37 percent), those of pay grade E1-E5 (36 percent), those on active duty 4 years or less (about 37 percent), those stationed in Europe (31 percent), and those at the present duty station 2 years or less (about 27 percent).

6. NEGATIVE EFFECTS OF ALCOHOL AND NONMEDICAL DRUG USE

The use of alcohol and drugs by military personnel results in varying degrees of serious negative consequences. These include work impairment, physical damage, the disruption of social relationships, and other consequences such as participation in detoxification, rehabilitation, or treatment programs. These negative effects may arise from dependence on alcohol and drugs or may be experienced without such dependence. In either case these negative effects disrupt the health, social life, and work performance of military personnel.

Analyses presented in this chapter outline the negative effects stemming from alcohol and drug use that are experienced by military personnel. As with analyses presented in other chapters, the prevalence of these effects is investigated across the four Services, geographic world regions, and military pay grades. We begin by discussing the construction of the measures of negative effects that assess serious consequences and dependence. The use of these measures is then reported in connection with alcohol use and drug use.

A. Definitions of Measures of Negative Effects

Several measures of negative effects are examined in this chapter: Serious consequences arising from incidents associated with alcohol use and drug use; dependence on alcohol or drugs; and alcohol use problems. A number of the measures are derived from previous alcohol and drug research and enable comparison of changes over time in the severity of problems associated with alcohol and drug use.

1. Serious Consequences

The types of alcohol- and drug-related incidents considered here are drawn from a study of alcohol problems in the Air Force conducted by The Rand Corporation (Polich and Orvis, 1979). Although the measures originally assessed just alcohol-related problems, they have been adapted here to examine the prevalence of drug-related problems as well. Problem incidents describe dysfunction in three major areas: work impairment, physical damage, and social disruption. In addition, a fourth category, "Others," is added which includes items that could be subsumed under the three categories but which are kept separate to permit comparisons with The Rand Corporation study.

The incidents do not describe the cataclysmic events such as losing a job which may result from alcohol or drug use, but rather the specific steps which usually precede such significant events. In some sense, the incidents studied here may be seen as warning devices for the existence of a larger problem.

a. Work Impairment

Three measures of work impairment are used to examine problems resulting from alcohol use and from drug use. They were a UCMJ punishment, a lower performance rating, or lost three or more working days due to either alcohol or drug use. The prevalence of each incident as well as the prevalence of having experienced any of the incidents is examined.

b. Physical Damage

Physical damage was examined using five different measures. They are: kept from duty 1 week or longer by illness; hospitalized for 2 or more days; visited a physician 2 or more times; hurt in an accident; or had an accident causing injury to others or property damage associated with alcohol or drug use. A summary measure of having experienced any of the incidents indicating physical damage was also created.

c. Social Disruption

Six measures of social disruption were assessed. These include: having a spouse leave; having a spouse threaten to leave; being arrested for driving under the influence of alcohol (or driving after using drugs); being arrested for a nondriving drinking incident (or arrested for a nondriving drug incident); becoming incarcerated; or having fights associated with alcohol or drug use. A summary measure of having experienced any of the incidents indicating social disruption was also created.

d. Other Consequences

The occurrence of four other problems was also examined--having not been promoted because of alcohol or drug problems; participated in a detoxification program; hit spouse or children; or entered a treatment or rehabilitation program. These four items were taken from the 1980 Worldwide Survey (Burt and Biegel, 1980). A summary measure of these "other consequences" was created.

e. Summary Indices

In addition to summary measures of the four major categories of incidents just noted, several additional summary measures of serious

consequences were calculated. First, to aid comparability with The Rand Study, a measure was created of the percentage of military personnel having experienced one or more of the 14 serious incidents studied as indicators of work impairment, physical damage, or social disruption. Although The Rand Study involved only measures of alcohol-related incidents, measures of consequences related to both alcohol and drug use were calculated. Second, to aid comparability with the 1980 Worldwide Survey (Burt and Biegel, 1980), measures were created of the percentage of military personnel who experienced one or more of 16 serious alcohol incidents (and drug incidents) studied here and by Burt and Biegel as indicators of work impairment, physical damage, social disruption, or "other consequences." Finally, a measure of the percentage of military personnel who experienced one or more of all 18 serious alcohol incidents (and drug incidents) was created.

2. Dependence

Measures were developed of the extent to which military personnel could be classified as dependent on either alcohol or drugs. The measures of alcohol dependence and drug dependence differ in the types of items included in each and the criteria by which one can be classified as dependent.

a. Alcohol Dependence. The measure of alcohol dependence developed here corresponded to the computation used by Polich and Orvis (1979) and was based on the following five items.

- I awakened unable to remember some of the things I had done while drinking the day before (Q48A).
- My hands shook a lot after drinking the day before (Q48C).
- I had the "shakes" because of drinking (Q48H).
- I could not stop drinking before becoming drunk (Q48D).
- I took a drink the first thing when I got up (Q48G).

The five items represent four symptoms of blackouts (item 1), tremors or shakes (items 2 and 3), impaired control (item 4), and morning drinking (item 5). Rates of occurrence of these events during the past year were first converted to an estimated number of days the event occurred. These frequencies were then summed over the four symptoms (the maximum frequency of items 2 and 3 was used) and individuals with scores of 48 or more were classified as dependent. The theoretical basis for this measure is an "alcoholism" model arising from a subjective assessment of the need for alcohol for daily functioning.

The prevalence of both alcohol dependence and alcohol intoxication is highest among E1-E5 personnel of all pay grades and lower among Air Force personnel than personnel of the other Services. There is a close correspondence between alcohol dependence and the average daily consumption of alcohol and the number of serious consequences related to alcohol use.

3. Alcohol Problems

The patterns of association between drinking and problems are investigated in Tables 6.10 - 6.12. Alcohol use problem categories were constructed using information about serious consequences experienced during the past 12 months, alcohol dependence status, and average daily consumption of ethanol. Percentage distributions are presented in Table 6.10, for these items. By far the most frequent type of drinker (78 percent for the total DoD and 72 to 86 percent of the four Services) is one who reported no problems, is not alcohol dependent, and who drinks 0.0-4.9 ounces of ethanol a day on the average. Thus, about three-fourths of military personnel are not heavy drinkers nor have they experienced serious consequences nor are they classified as alcohol dependent. The next most frequent type of drinker (10 percent of total DoD and 8 to 15 percent of the four Services) has experienced one or more problems but is not alcohol dependent and drinks 0.0 - 4.9 ounces per day on the average. Patterns of these types of drinkers are similar for the four Services.

These patterns of association between drinking and problems are further examined by using the scheme in Table 6.10 to construct three categories of alcohol problems. Military personnel are classified as "not affected" (they experienced no problems, are not alcohol dependent, and drink less than 5 ounces of ethanol a day); "adverse effects, not dependent" (they are not dependent but experienced one or more problems, or they drink 5 or more ounces a day); and "dependent" (they are alcohol dependent and may have experienced problems). As seen in Table 6.11, by far the most frequent type of alcohol user (78 percent) is "not affected" by adverse effects or alcohol dependence. About 14 percent of total DoD personnel had experienced adverse effects but were not dependent, and 9 percent were alcohol dependent. Minor differences among the Service were seen, with Air Force personnel more likely not to be affected. E1-E5 personnel, for all Services, were much more likely than other pay grades to be alcohol dependent or to have experienced adverse effects without being alcohol dependent.

Table 6.9. Indicators of Alcohol Intoxication During the Past 12 Months

Pay Grade/Indicator of Alcohol Intoxication	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
E1-E5						
1. Became drunk without planning to	40.5 (0.9)	50.0 (0.8)	43.4 (2.0)	38.5 (1.3)	43.0 (0.6)	
2. Stayed drunk more than one day at a time	20.6 (1.4)	22.1 (1.2)	22.7 (0.5)	12.2 (0.8)	19.2 (0.6)	
3. Got severely sick (nausea, vomiting, headache)	39.8 (0.9)	49.2 (0.7)	46.7 (0.8)	39.9 (1.1)	43.2 (0.5)	
4. Skipped 3 or more meals while drinking	20.5 (1.4)	20.1 (1.6)	18.0 (1.1)	10.8 (0.4)	17.7 (0.7)	
Total with either of first two indicators	46.2 (0.8)	55.2 (1.3)	50.1 (0.9)	41.3 (1.4)	47.9 (0.6)	
Total with any indication of intoxication	56.9 (0.8)	67.3 (0.9)	62.9 (0.5)	53.9 (1.6)	59.7 (0.6)	
E6-E9						
1. Became drunk without planning to	27.2 (2.8)	29.8 (1.5)	32.5 (1.3)	26.9 (2.0)	28.2 (1.2)	
2. Stayed drunk more than one day at a time	6.9 (0.8)	7.1 (1.3)	4.9 (2.0)	2.4 (0.5)	5.5 (0.5)	
3. Got severely sick (nausea, vomiting, headache)	23.9 (2.0)	24.0 (1.4)	21.8 (4.2)	22.1 (1.3)	23.2 (0.9)	
4. Skipped 3 or more meals while drinking	9.4 (1.1)	7.5 (1.5)	3.4 (0.2)	3.8 (1.0)	6.8 (0.6)	
Total with either of first two indicators	28.9 (2.9)	31.4 (0.9)	33.6 (2.1)	27.3 (2.0)	29.4 (1.2)	
Total with any indication of intoxication	37.1 (2.9)	39.0 (1.3)	38.8 (1.9)	34.5 (2.4)	37.0 (1.3)	
W1-W4						
1. Became drunk without planning to	15.9 (2.9)	51.2 (19.8)	+	*	21.0 (4.1)	
2. Stayed drunk more than one day at a time	2.8 (1.5)	1.2 (1.2)	+	*	2.8 (1.3)	
3. Got severely sick (nausea, vomiting, headache)	16.1 (2.5)	22.4 (12.3)	+	*	16.2 (2.5)	
4. Skipped 3 or more meals while drinking	1.9 (1.2)	16.3 (12.8)	+	*	3.2 (2.0)	
Total with either of first two indicators	17.3 (2.4)	52.4 (19.6)	+	*	22.3 (4.0)	
Total with any indication of intoxication	25.3 (3.1)	53.6 (19.6)	+	*	29.3 (3.9)	
01-03						
1. Became drunk without planning to	23.3 (2.8)	29.2 (3.0)	30.7 (14.6)	26.6 (4.5)	26.2 (2.3)	
2. Stayed drunk more than one day at a time	2.8 (0.8)	3.1 (0.9)	0.9 (0.4)	2.4 (0.5)	2.5 (0.4)	
3. Got severely sick (nausea, vomiting, headache)	28.1 (2.9)	32.1 (4.0)	36.3 (11.0)	26.0 (2.6)	28.5 (1.8)	
4. Skipped 3 or more meals while drinking	1.5 (0.5)	4.1 (1.2)	0.3 (0.3)	0.9 (0.3)	1.6 (0.3)	
Total with either of first two indicators	24.0 (2.9)	30.1 (3.5)	30.9 (14.7)	27.1 (4.2)	26.9 (2.3)	
Total with any indication of intoxication	39.3 (4.0)	44.4 (3.5)	42.6 (9.6)	37.7 (3.4)	39.7 (2.2)	
04-06						
1. Became drunk without planning to	20.2 (4.2)	28.9 (5.8)	26.4 (12.0)	19.4 (2.4)	21.7 (2.2)	
2. Stayed drunk more than one day at a time	1.8 (1.2)	0.3 (0.2)	0.0 (**)	0.6 (0.5)	0.8 (0.4)	
3. Got severely sick (nausea, vomiting, headache)	20.8 (3.6)	21.3 (3.9)	42.4 (3.0)	16.8 (1.0)	19.7 (1.3)	
4. Skipped 3 or more meals while drinking	1.8 (1.3)	0.3 (0.2)	0.0 (**)	0.5 (0.5)	0.7 (0.4)	
Total with either of first two indicators	20.5 (4.2)	29.0 (5.8)	26.4 (12.0)	19.4 (2.4)	21.8 (2.2)	
Total with any indication of intoxication	31.9 (5.1)	39.0 (4.6)	45.5 (1.8)	26.6 (1.4)	31.0 (2.0)	
Total						
1. Became drunk without planning to	35.9 (0.9)	44.8 (1.4)	40.9 (0.6)	33.4 (1.7)	38.0 (0.7)	
2. Stayed drunk more than one day at a time	16.1 (1.2)	17.8 (1.3)	18.5 (0.9)	8.3 (0.8)	14.6 (0.6)	
3. Got severely sick (nausea, vomiting, headache)	35.2 (0.9)	43.0 (1.3)	42.5 (0.6)	33.1 (1.5)	37.4 (0.7)	
4. Skipped 3 or more meals while drinking	16.3 (1.1)	16.4 (1.2)	14.6 (0.3)	7.5 (0.7)	13.7 (0.5)	
Total with either of first two indicators	40.3 (0.8)	49.0 (1.8)	46.3 (0.7)	35.3 (1.8)	41.8 (0.8)	
Total with any indication of intoxication	50.9 (0.9)	60.3 (1.8)	58.1 (0.7)	46.3 (2.0)	52.8 (0.8)	

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

* Not applicable.

** Informative standard error not available.

† Fewer than 20 respondents.

experienced any serious consequences, compared with 72 percent of those who scored 182 or more on the dependence symptom score. The relationship is apparent for each branch of the service, with 60 to 68 percent of those personnel in each branch who are classified as dependent also having experienced any serious consequences. Thus, not only is the dependence symptom score closely associated with the average daily consumption of ethanol, but also indicative of the experience of serious alcohol-related consequences.

Similar to symptoms of alcohol dependence and derived from the same "alcoholism" model are measures of alcohol intoxication. These include becoming drunk without planning to, staying drunk more than one day at a time, becoming severely sick, or skipping 3 or more meals while drinking. The occurrence of each of these indicators of alcohol intoxication during the past 12 months for the four Services and pay grades is presented in Table 6.9. The first two items were included in the 1980 Worldwide Survey by Burt and Biegel (1980). Accordingly, two summary measures of prevalence are presented: the percentage who experienced either of the first two consequences and the percentage who experienced any of the four indicators of intoxication. Looking back at Tables 6.5 and 6.6, less than 7 percent of military personnel had experienced any of the four indicators of alcohol dependence (blackouts, tremors, impaired control, or morning drinking). However, as shown in Table 6.9, the prevalence of alcohol intoxication is much higher. Fifty-three percent of total DoD personnel experienced at least one of the four indicators of alcohol intoxication and 42 percent experienced either of the first two during the past 12 months. The 42 percent for the first two indicators shows a marked increase from the 23 percent found by Burt and Biegel (1980). Fully 38 percent had become severely sick because of their drinking. Fewer had stayed drunk more than one day at a time (15 percent) or had skipped 3 or more meals while drinking (14 percent). The prevalence of each of the indicators of alcohol intoxication was higher for E1-E5 personnel than other pay grades and tended to be lower among Air Force personnel than personnel of other branches of the service.

In sum, almost 7 percent of all DoD personnel have experienced symptoms during the past year by which they might be classified as alcohol dependent, and slightly over half have experienced symptoms of alcohol intoxication.

Table 6.8. Number of Different Serious Consequences by Alcohol Dependence Symptoms

Service/Number of Serious Consequences	Dependence Symptom Score (Percent Scoring Within Range)					Percent Dependent (Total Scoring 48 or More)
	0	1-23	24-47	48-181	182 or More	
Army						
No serious consequences	95.8	74.5	55.7	43.3	27.8	35.5
1 serious consequence	3.3	15.8	21.0	25.4	24.9	25.2
2 or more serious consequences	0.9	9.7	23.3	31.3	47.3	39.3
Total, any serious consequences	4.2	25.5	44.3	56.7	72.2	64.5
Navy						
No serious consequences	95.6	78.5	51.2	36.0	26.4	32.1
1 serious consequence	3.9	14.6	31.4	26.0	18.2	22.8
2 or more serious consequences	0.5	6.9	17.4	38.0	55.4	45.1
Total, any serious consequences	4.4	21.5	48.8	64.0	73.6	67.9
Marine Corps						
No serious consequences	94.3	75.0	49.9	36.7	30.1	33.9
1 serious consequence	4.7	15.1	27.3	23.2	23.4	23.2
2 or more serious consequences	1.0	9.9	22.8	40.1	46.5	42.9
Total, any serious consequences	5.7	25.0	50.1	63.3	69.9	66.1
Air Force						
No serious consequences	97.6	81.9	65.9	47.8	27.2	39.6
1 serious consequence	1.8	12.0	18.7	29.3	24.6	27.5
2 or more serious consequences	0.6	6.1	15.4	22.9	48.2	32.9
Total, any serious consequences	2.4	18.1	34.1	52.2	72.8	60.4
Total DoD						
No serious consequences	96.2	77.8	55.8	40.5	27.5	34.7
1 serious consequence	3.1	14.3	24.6	25.9	22.6	24.4
2 or more serious consequences	0.7	7.9	19.6	33.6	49.9	40.9
Total, any serious consequences	3.8	22.2	44.2	59.5	72.5	65.3

Note: For each Service, tabled values are column percentages and the first three rows total 100 percent, within rounding error. The "Total" row within each Service is the sum of the preceding two consequence rows (i.e., 1..., 2 or more...) for that service.

Table 6.7. Alcohol Dependence Symptoms by Average Daily Consumption of Ethanol

Average Daily Consumption of Ethanol, in Ounces							
Service/Dependence Symptom Score (percent scoring within range)	None (No Drinks)	0.01-0.40 (<1 Drink)	0.41-2.16 (1-4 Drinks)	2.17-3.60 (5-7 Drinks)	3.61-6.00 (8-12 Drinks)	More than 6.0 ounces (>12 Drinks)	5.0 ounces or more (>10 Drinks)*
Army							
0 (no symptoms)	98.3	86.7	51.0	24.7	18.6	11.6	12.0
1-23	0.9	12.0	34.9	38.7	23.8	14.8	16.2
24-47	0.0	0.8	7.8	15.7	19.8	12.1	14.2
48-181	0.3	0.3	4.2	12.8	21.3	18.1	19.8
182 or more	0.5	0.1	2.1	8.1	16.5	43.4	37.8
Dependent (score 48+)	0.8	0.4	6.3	20.9	37.8	61.5	57.6
Navy							
0 (no symptoms)	97.7	81.0	41.4	16.6	16.8	14.5	13.3
1-23	1.9	17.0	43.1	38.2	26.2	17.4	18.7
24-47	0.0	1.1	9.5	20.3	18.1	9.7	13.8
48-181	0.0	0.4	5.0	17.7	22.1	22.7	23.8
182 or more	0.4	0.5	1.0	7.2	16.8	35.7	30.4
Dependent (score 48+)	0.4	0.9	6.0	24.9	38.9	58.4	54.2
Marine Corps							
0 (no symptoms)	99.9	80.6	40.5	15.3	8.4	3.0	3.8
1-23	0.1	16.8	43.6	40.4	29.5	19.1	20.8
24-47	0.0	2.6	8.6	19.7	27.1	16.1	18.9
48-181	0.0	0.0	6.6	14.2	18.7	14.9	16.5
182 or more	0.0	0.0	0.7	10.4	16.3	47.0	40.1
Dependent (score 48+)	0.0	0.0	7.3	24.6	35.0	61.9	56.6
Air Force							
0 (no symptoms)	99.1	87.5	51.9	25.2	12.9	21.3	13.9
1-23	0.9	11.4	39.1	39.5	43.2	19.8	29.1
24-47	0.0	0.7	6.5	18.6	18.7	23.4	22.7
48-181	0.0	0.3	1.8	10.6	15.9	15.9	16.4
182 or more	0.0	0.2	0.8	6.1	9.3	19.7	16.4
Dependent (score 48+)	0.0	0.5	2.6	16.7	25.2	35.6	34.4
Total DoD							
0 (no symptoms)	98.6	85.2	47.7	21.2	16.0	12.9	12.1
1-23	1.0	13.3	39.1	38.9	28.8	16.6	19.1
24-47	0.0	1.0	8.0	18.2	19.7	12.8	15.6
48-181	0.1	0.3	4.0	14.1	20.3	19.1	20.4
182 or more	0.3	0.2	1.3	7.6	15.2	38.6	32.8
Dependent (score 48+)	0.4	0.5	5.3	21.7	35.5	57.7	53.2

Note: For each Service, tabled values are column percentages and the first five rows total 100%, within rounding error. The "dependent" row within each Service is the sum of the preceding two dependence symptom score for that Service.

*This column is presented separately since an average daily consumption of 5.0 or more ounces of ethanol represents a commonly accepted threshold of presumptive medical harm (e.g., cirrhosis, organic brain damage).

Table 6.5. Symptoms of Alcohol Dependence - Total DoD

Symptom	Item Wording	Never	1-11 Times Per Year	1-3 Times Per Month	1-4 Times Per Week	5-7 Times Per Week
Blackouts	I awakened unable to remember some of the things I had done while drinking the day before. (Q48A)	67.5	23.8	5.5	2.5	0.7
Tremors ("shakes")	My hands shook a lot after drinking the day before. (Q48C)	85.6	8.7	2.9	2.0	0.7
	I had the "shakes" because of drinking. (Q48H)	89.4	7.1	1.8	1.2	0.5
Impaired control	I could not stop drinking before becoming drunk. (Q48D)	82.4	9.6	3.7	3.1	1.2
"Morning" drinking	I took a drink the first thing when I got up. (Q48G)	88.3	7.9	2.1	1.1	0.5

Note: Table values are row percentages.

Table 6.6. Alcohol Dependence During the Past 12 Months

Pay Grade	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
E1-E5	13.6	(1.1)	14.7	(1.0)	12.3	(1.7)	5.4	(0.9)	11.7	(0.5)
E6-E9	4.4	(0.9)	3.7	(0.9)	3.7	(1.1)	2.2	(0.6)	3.5	(0.5)
W1-W4	0.5	(0.3)	0.0	(**)	+	(+)	*	(*)	0.4	(0.3)
O1-O3	1.3	(0.6)	2.1	(0.9)	2.4	(1.0)	1.5	(0.6)	1.6	(0.4)
O4-O6	3.1	(1.4)	0.5	(0.4)	0.0	(**)	0.3	(0.2)	1.0	(0.4)
Total	10.5	(0.8)	11.6	(1.0)	10.3	(1.8)	4.0	(0.7)	9.0	(0.5)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

* Fewer than 20 respondents.

* Not applicable.

** Informative standard error not available.

2. Alcohol Dependence

The prevalence of alcohol dependence and its relationship to serious consequences associated with alcohol use are examined in Tables 6.5 to 6.9. Among all DoD personnel, almost 9 percent (Table 6.6) have experienced symptoms during the past year by which they might be classified as alcohol dependent. The prevalence of the four symptoms used to define alcohol dependence is presented in Table 6.5, along with the frequency of their occurrence during the past year. Blackouts are the most common symptom (33 percent ever "during the past year"), followed by impaired control (18 percent), tremors (14 percent and 11 percent), and "morning" drinking (12 percent). The occurrence of most symptoms is relatively infrequent, with the largest percentages being experienced only 1-11 times per year.

Table 6.6 shows alcohol dependence for the services by pay grade. For all DoD personnel, alcohol dependence is most common among E1-E5 personnel (12 percent) compared to other pay grades (4 percent or less). Among the Services, Army (11 percent), Navy (12 percent) and Marine Corps (10 percent) personnel show greater magnitudes of dependence than Air Force (4 percent) personnel.

The correspondence between alcohol dependence and the average daily consumption of ethanol is examined in Table 6.7. The dependence symptom score is derived from the number of days military personnel experienced each of the four dependence symptoms--blackouts, impaired control, tremors and "morning" drinking. Scores can range from 0 to 1412; alcohol dependence is defined as a score of 48 or more. There is a clear relationship between the average daily consumption of ethanol and the dependence symptom score such that the symptom score increases with the amount of ethanol consumed. For the total DoD, less than 1 percent of the "none" category of drinker was classified as dependent, compared with 39 percent of those who drank more than 6.0 ounces on an average day. Among heavy drinkers, those whose average daily consumption was 5.0 ounces or more, the percentage of alcohol dependent persons was lower among the Air Force (34 percent) compared to the three other Services (54 to 58 percent).

There is also a relationship between alcohol dependence and the number of alcohol-related serious consequences as shown in Table 6.8. For the total DoD, only 4 percent of those who scored 0 on the dependence symptom score

Table 6.4. Number of Different Serious Consequences by Average Daily Consumption of Ethanol

Service/Number of Consequences	Average Daily Consumption of Ethanol, in Ounces						
	None (No Drinks)	0.01-0.40 (<1 Drink)	0.41-2.16 (1-4 Drinks)	2.17-3.60 (5-7 Drinks)	3.61-6.00 (8-12 Drinks)	More than 6.0 ounces (>12 Drinks)	5.0 ounces or more (>10 Drinks)*
Army							
No serious consequences	98.9	95.3	82.7	63.8	53.6	36.4	40.9
1 serious consequence	0.5	3.4	10.5	18.4	21.1	27.1	26.3
2 or more serious consequences	0.6	1.3	6.8	17.8	25.3	36.5	32.8
Total, any serious consequences	1.1	4.7	17.3	36.2	46.4	63.6	59.1
Navy							
No serious consequences	99.6	94.5	81.7	60.8	50.4	37.7	38.4
1 serious consequence	0.4	4.2	13.3	18.6	20.0	28.0	27.0
2 or more serious consequences	0.0	1.3	5.0	20.6	29.6	34.3	34.6
Total, any serious consequences	0.4	5.5	18.3	39.2	49.6	62.3	61.6
Marine Corps							
No serious consequences	98.7	92.5	80.7	53.6	44.9	31.2	37.5
1 serious consequence	1.3	6.1	10.0	29.8	19.1	31.8	29.1
2 or more serious consequences	0.0	1.4	9.3	16.6	36.0	37.0	33.4
Total, any serious consequences	1.3	7.5	19.3	46.4	55.1	68.8	62.5
Air Force							
No serious consequences	99.4	97.6	87.5	66.8	64.2	62.2	61.4
1 serious consequence	0.3	1.7	8.3	17.8	19.7	18.3	16.2
2 or more serious consequences	0.3	0.7	4.2	15.4	16.1	19.5	22.4
Total, any serious consequences	0.6	2.4	12.5	33.2	35.8	37.8	38.6
Total DoD							
No serious consequences	99.2	95.7	83.6	62.4	53.7	39.2	42.5
1 serious consequence	0.5	3.2	10.6	19.5	20.3	26.8	25.4
2 or more serious consequences	0.3	1.1	5.8	18.1	26.0	34.0	32.1
Total, any serious consequences	0.8	4.3	16.4	37.6	46.3	60.8	57.5

Note: For each service, tabled values are column percentages and the first three rows total 100 percent, within rounding error. The "Total" row within each Service is the sum of the preceding two consequence rows (i.e., 1 ..., 2 or more...) for that Service.

* This column is presented separately since an average daily consumption of 5.0 or more ounces of ethanol represents a commonly accepted threshold of presumptive medical harm (e.g., cirrhosis, organic brain damage).

Table 6.3. Effects of Alcohol Use on Work Performance

Service/Effects on Work Performance	Percent Reporting (Past Year)		Estimated Days Lost Per Person
	Any Occurrence	Occurrences Costing 3 or More Work Days	
Army			
Lowered Performance	27.5	3.0	0.40
Late for Work or Left Work Early	15.9	1.3	0.18
Did Not Come to Work	5.8	2.1	0.31
Drunk or High While Working	12.4	2.2	0.24
Any Missed Work	33.1	7.2	1.03
Navy			
Lowered Performance	37.2	4.7	0.56
Late for Work or Left Work Early	17.2	1.0	0.18
Did Not Come to Work	4.7	1.5	0.19
Drunk or High While Working	14.5	2.5	0.26
Any Missed Work	41.7	8.5	1.04
Marine Corps			
Lowered Performance	32.5	3.7	0.47
Late for Work or Left Work Early	16.4	0.9	0.16
Did Not Come to Work	3.9	1.0	0.21
Drunk or High While Working	12.1	1.8	0.21
Any Missed Work	37.6	7.0	0.96
Air Force			
Lowered Performance	24.5	1.5	0.24
Late for Work or Left Work Early	12.7	0.5	0.11
Did Not Come to Work	2.4	0.5	0.06
Drunk or High While Working	6.2	0.6	0.08
Any Missed Work	28.0	3.4	0.45
Total DoD			
Lowered Performance	29.7	3.1	0.40
Late for Work or Left Work Early	15.4	1.0	0.16
Did Not Come to Work	4.4	1.4	0.18
Drunk or High While Working	11.2	1.8	0.20
Any Missed Work	34.4	6.5	0.87

The effects of alcohol use on work performance are further examined in Table 6.3 which presents the prevalence of occurrences of each of the four indicators. For the total DoD, while 34 percent report any occurrence resulting from missing work, only 7 percent of people have experienced such an occasion resulting in the loss of 3 or more work days. On the average such occurrences resulted in the loss of less than one day of work per person (.87) during the past year. Days lost by Army (1.03), Navy (1.04), or Marine (.96) personnel are higher than those lost by Air Force (.45) personnel.

The number of serious consequences experienced among military personnel who drink varying amounts of ethanol on an average day is presented in Table 6.4. There is a clear relationship between the average daily consumption of ethanol and the number of consequences experienced. For the total DoD, less than 1 percent of those drinking "none" experienced any consequences, while 61 percent of those drinking more than 6.0 ounces of ethanol a day experienced any consequences; similarly, less than 1 percent of those drinking "none" experienced 1 serious consequence or 2 or more serious consequences, compared with 27 percent and 34 percent, respectively, of those drinking more than 6.0 ounces a day.* For most comparisons, the percentage experiencing 1, 2 or more, or any serious consequences by different levels of average daily consumption of ethanol is lowest among Air Force personnel and similar among the remaining three Services.

In sum, many military personnel, almost one in five, have during the past year experienced serious consequences associated with their drinking. These have involved instances of work impairment, physical damage, social disruption, and other consequences; slightly more than one-third have experienced a loss of work productivity. The prevalence of such consequences is lower among Air Force personnel than personnel of the other three branches.

* That those drinking "none" could experience any serious consequence could result from several situations. First, someone who drank heavily on only one or several occasions during the past year could be characterized by an average daily consumption level of "none;" he thus could have legitimately experienced one or more serious consequences associated with episodic drinking. Second, the expression of serious consequences could be an instance of misattribution of a nonalcohol-related event to alcohol.

Table 6.2. Loss of Productivity Because of Alcohol Use During the Past 12 Months

Productivity Item/ Pay Grade	Service									
	Army		Navy		Marine Corps		Air Force		Total DoD	
Lowered Performance										
E1-E5	31.9	(1.1)	41.8	(2.7)	35.9	(2.0)	28.4	(1.8)	34.2	(0.9)
E6-E9	16.3	(1.3)	23.4	(0.7)	16.7	(3.4)	17.6	(1.4)	18.6	(0.7)
W1-W4	14.4	(3.4)	19.3	(11.0)	+	+	*	(*)	16.5	(3.9)
O1-O3	18.8	(3.6)	26.5	(4.4)	20.2	(4.0)	20.6	(2.9)	21.0	(1.9)
O4-O6	19.0	(2.7)	23.1	(3.3)	31.8	(8.0)	16.6	(1.7)	19.1	(1.4)
Total	27.5	(0.8)	37.2	(2.1)	32.5	(1.3)	24.5	(1.6)	29.7	(0.7)
Late for Work or Left Work Early										
E1-E5	18.8	(1.3)	20.7	(2.2)	18.5	(1.6)	16.3	(1.0)	18.7	(0.8)
E6-E9	10.1	(1.0)	8.5	(1.1)	8.5	(1.6)	8.0	(1.1)	9.0	(0.6)
W1-W4	4.1	(1.1)	1.6	(1.4)	+	+	*	(*)	3.8	(0.9)
O1-O3	9.0	(1.4)	6.3	(2.2)	11.2	(6.2)	7.7	(1.0)	8.1	(0.8)
O4-O6	6.6	(3.6)	4.0	(1.2)	2.5	(2.0)	2.9	(0.7)	3.9	(1.0)
Total	15.9	(1.0)	17.2	(1.4)	16.4	(0.7)	12.7	(1.0)	15.4	(0.6)
Did Not Come to Work										
E1-E5	7.3	(0.6)	6.1	(0.7)	4.3	(0.9)	3.5	(0.5)	5.7	(0.3)
E6-E9	2.8	(0.8)	1.1	(0.5)	2.5	(0.3)	0.9	(0.3)	1.7	(0.4)
W1-W4	0.4	(0.4)	0.0	(**)	+	+	*	(*)	0.4	(0.4)
O1-O3	1.0	(0.6)	0.3	(0.2)	3.0	(4.0)	1.4	(0.4)	1.2	(0.3)
O4-O6	2.2	(1.3)	0.7	(0.4)	0.0	(**)	0.1	(0.1)	0.6	(0.3)
Total	5.8	(0.5)	4.7	(0.7)	3.9	(1.0)	2.4	(0.4)	4.4	(0.3)
Drunk or High While Working										
E1-E5	16.0	(1.1)	18.2	(1.6)	14.4	(1.6)	8.4	(1.1)	14.6	(0.6)
E6-E9	4.9	(0.9)	4.3	(1.2)	5.3	(0.5)	3.1	(0.6)	4.2	(0.5)
W1-W4	0.9	(0.7)	1.2	(1.2)	+	+	*	(*)	0.9	(0.6)
O1-O3	1.6	(0.7)	2.7	(0.9)	0.7	(0.4)	3.0	(0.8)	2.3	(0.4)
O4-O6	3.0	(1.5)	3.9	(2.5)	2.0	(1.9)	0.5	(0.3)	1.8	(0.6)
Total	12.4	(0.9)	14.5	(1.3)	12.1	(1.8)	6.2	(0.9)	11.2	(0.5)
Total With Any Productivity Loss										
E1-E5	38.6	(1.1)	47.4	(2.5)	41.6	(2.4)	33.2	(1.7)	40.1	(0.9)
E6-E9	20.3	(1.7)	25.3	(0.8)	20.8	(2.3)	19.3	(1.7)	21.4	(0.8)
W1-W4	16.6	(3.6)	19.3	(11.0)	+	+	*	(*)	18.5	(3.9)
O1-O3	19.9	(3.7)	27.7	(4.3)	23.4	(8.0)	21.5	(2.8)	22.2	(1.9)
O4-O6	19.3	(2.7)	23.3	(3.3)	31.8	(8.0)	16.9	(1.7)	19.3	(1.4)
Total	33.1	(0.8)	41.7	(1.8)	37.6	(1.2)	28.0	(1.7)	34.4	(0.7)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

+Less than 20 respondents.

*Not applicable.

**Informative standard error not available.

their drinking during the past 12 months. The prevalence of serious consequences was highest in the Marine Corps (23 percent), followed by the Navy (21 percent), the Army (19 percent), and the Air Force (11 percent).

The prevalence of incidents involving social disruption were very similar (11 percent) to those involving physical damage (10 percent), and work impairment (9 percent), but were somewhat higher than other consequences (7 percent). Using the Rand categories (e.g., Polich and Orvis, 1979) showed 17 percent who experienced one or more alcohol-related incidents during the past year involving work impairment, physical damage, or social disruption. For the Air Force this number is 10 percent, a value that compares favorably with the 12 percent reported by Polich and Orvis (1979).

Using the categories imposed by Burt and Biegel in the 1980 Worldwide Study shows that 14 percent experienced one or more alcohol-related incidents; this figure indicates an increase in the prevalence of such incidents of 3 percentage points over the 11 percent reported in 1980.

The prevalence of each of the individual alcohol-related consequences reported in Table 6.1 tends to be low. The incident with the highest prevalence, loss of 3 or more working days, reaches 6 percent, while the next highest category of fights, reaches 5 percent. Four percent of military personnel have entered a rehabilitation or treatment program associated with their drinking, while the prevalence of other incidents is 3 percent or less.

The prevalence of loss of productivity among personnel of the four Services and pay grades is examined in Table 6.2. The prevalence of four indicators of loss of productivity--lowered performance, late for work or left work early, did not come to work, and drunk or high while working--is examined, as well as a summary measure of having experienced any of these situations. For the total DoD, 34 percent of personnel reported some indication of loss of productivity. Lowered performance (30 percent) is the highest single indicator. Although substantial percentages were late for work or left early (15 percent) or were drunk or high while working (11 percent), only a few (4 percent) did not come to work because of their drinking. The prevalence of any productivity loss is highest among Navy personnel and lowest among Air Force personnel. Among pay grades E1-E5's were affected the most.

Table 6.1. Serious Consequences of Alcohol Use During the Past 12 Months

Consequences	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
<u>Work Impairment</u>					
Received UCMJ punishment ^b	3.7 (0.5)	3.3 (0.6)	4.2 (1.0)	1.8 (0.4)	3.1 (0.3)
Lower performance rating ^b	2.7 (0.3)	2.8 (0.4)	4.6 (0.7)	1.3 (0.3)	2.5 (0.2)
Loss of 3 or more working days	7.2 (0.6)	8.5 (0.8)	6.9 (2.0)	3.4 (0.4)	6.4 (0.4)
Total with any work impairment	10.2 (0.8)	10.6 (0.9)	11.2 (2.0)	5.0 (0.6)	8.9 (0.4)
<u>Physical Damage</u>					
Illness kept from duty 1 week or longer	1.9 (0.3)	0.9 (0.1)	1.2 (0.5)	0.5 (0.1)	1.2 (0.1)
Hospitalized for 2 or more days	0.7 (0.1)	0.7 (0.2)	1.1 (0.1)	0.4 (0.1)	0.7 (0.1)
Visited physician 2 or more times	0.7 (0.2)	1.1 (0.1)	0.5 (0.3)	0.4 (0.1)	0.7 (0.1)
Hurt in accident	2.9 (0.2)	3.5 (0.4)	3.4 (0.1)	1.5 (0.3)	2.7 (0.2)
Had accident causing injury to others or property damage ^b	2.7 (0.3)	3.0 (0.2)	1.7 (0.3)	1.3 (0.3)	2.3 (0.1)
Total with any physical damage	11.7 (0.9)	12.9 (1.3)	9.6 (0.9)	5.5 (0.5)	10.1 (0.5)
<u>Social Disruption</u>					
Spouse left ^b	1.4 (0.2)	0.7 (0.1)	0.8 (0.1)	0.5 (0.1)	0.9 (0.1)
Spouse threatened to leave ^b	3.1 (0.3)	1.9 (0.4)	2.0 (0.5)	1.8 (0.2)	2.3 (0.2)
Arrested for driving under the influence ^b	3.7 (0.4)	3.1 (0.5)	4.9 (1.0)	2.2 (0.3)	3.2 (0.2)
Arrested for nondriving drinking incident ^b	1.9 (0.5)	3.0 (0.3)	3.2 (0.5)	1.4 (0.2)	2.6 (0.2)
Incarcerated ^b	3.3 (0.4)	3.3 (0.5)	4.3 (0.2)	1.5 (0.1)	2.9 (0.2)
Fights	5.5 (0.6)	7.0 (0.6)	7.3 (0.6)	2.1 (0.2)	5.1 (0.3)
Total with any social disruption	11.6 (1.1)	12.6 (1.1)	14.3 (1.1)	6.3 (0.6)	10.6 (0.5)
Total with one or more of above consequences ^a	18.1 (1.1)	20.4 (1.5)	21.5 (1.0)	10.0 (1.0)	16.8 (0.6)
<u>Other Consequences</u>					
Did not get promoted ^b	2.5 (0.3)	1.3 (0.2)	2.9 (0.3)	0.7 (0.2)	1.7 (0.1)
Detoxified	1.2 (0.2)	1.4 (0.1)	0.6 (-)	0.4 (0.1)	1.0 (0.1)
Hit spouse or children ^b	3.8 (0.4)	2.7 (0.4)	2.3 (0.2)	1.8 (0.3)	2.8 (0.2)
Entered rehabilitation or treatment program ^b	3.9 (0.4)	4.0 (0.4)	6.0 (0.8)	2.4 (0.5)	3.7 (0.2)
Total with any "other consequences"	8.1 (0.7)	7.2 (0.9)	9.6 (1.1)	4.3 (0.6)	6.9 (0.4)
Total with one or more of any consequences listed above	19.3 (1.1)	21.3 (1.5)	23.2 (0.8)	10.6 (1.0)	17.7 (0.6)
Total with one or more of consequences listed included in Burt and Biegel (1980) ^c	15.2 (1.1)	15.3 (1.5)	17.6 (1.8)	8.7 (1.1)	13.6 (0.6)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

^aAll items were included in the Rand Air Force Study (Polich & Orvis, 1979).

^bItems included in 1980 DoD study (Burt & Biegel, 1980).

^cAll items are from the 1980 study. "I attended a special training or education program because of a problem related to my drinking" was excluded from the 1982 study. Because those who might respond positively to this "special training or education" item are highly likely to have responded positively to other items, the effect on the total scores for the 1980 and 1982 surveys is probably insignificant.

-Estimate rounds to zero.

b. Drug Dependence. The measure of drug dependence developed here was modeled after that developed by Burt and Biegel (1980). An individual was classified as dependent on drugs if one or more of the following conditions existed:

- Used heroin, other opiates or barbiturates/sedatives at least 5 times per week during the past 30 days (Q67G, H, I).
- Experienced sickness (e.g., chills, nausea, stomach cramps, diarrhea) when use of addictive or nonaddictive drugs was stopped (Q72B-C).
- Was detoxified because of drug use (Q760).

This measure is based largely on an "addiction" model of dependence, or physiological dependence.

3. Alcohol Use Problems

Another approach to understanding the effects of alcohol use is to examine the nature and extent of problems that individuals experience. Alcohol use problem categories were derived from an examination of serious consequences experienced, alcohol dependence status, and average daily consumption of ethanol. This measure is developed in more detail below.

B. Alcohol Use

The negative effects associated with alcohol use are investigated by examining a variety of measures. We first investigated the prevalence of incidents related to alcohol use resulting in work impairment, physical damage, social disruption, or other consequences. Other measures report the relationship between the level of alcohol consumption and the number of consequences; the extent of alcohol dependence and its relation to the level of alcohol consumption and the number of consequences; and the relationship between drinking level types and the existence of alcohol problems. Some of the tables that follow do not report standard errors since their primary purpose is to show relationships between measures of alcohol use and problems rather than to provide estimates of alcohol use.

1. Serious Consequences of Alcohol Use

The prevalence of serious consequences of alcohol use during the past 12 months among personnel of the four Services is presented in Table 6.1. The types of consequences considered include work impairment, physical damage, social disruption, and other consequences. For the total DoD personnel, almost 18 percent experienced one or more of these consequences arising from

Table 6.10. Relationships Between Dimensions of Alcohol Use Problems

Number of Serious Consequences Reported Past Year	Alcohol Dependence Status	Average Daily Consumption of Ethanol, in Ounces	Service				Total DoD
			Army	Navy	Marine Corps	Air Force	
No Problems Reported	Not Dependent	0.0 - 4.9	75.4	72.9	72.3	86.4	77.6
		5.0 or more	1.9	2.2	1.3	1.5	1.8
	Dependent	0.0 - 4.9	2.3	2.6	2.4	1.0	2.0
		5.0 or more	1.2	0.9	0.6	0.4	0.8
1 or More Problems	Not Dependent	0.0 - 4.9	10.6	11.6	14.9	7.5	10.4
		5.0 or more	1.5	1.7	1.3	0.6	1.3
	Dependent	0.0 - 4.9	3.5	4.4	4.6	1.8	3.4
		5.0 or more	3.6	3.7	2.7	0.7	2.7

Note: Table entries are column percentages.

Table 6.11. Alcohol Use Problem Categories

Pay Grade/Problem Category	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
E1-E5						
Not Affected	70.0 (1.9)	66.9 (1.6)	67.6 (0.8)	81.7 (0.9)	71.8 (0.8)	
Adverse Effects, Not Dependent	16.4 (0.9)	18.4 (0.9)	20.1 (1.2)	12.9 (0.6)	16.5 (0.4)	
Dependent	13.6 (1.1)	14.7 (1.0)	12.3 (1.7)	5.4 (0.9)	11.7 (0.5)	
E6-E9						
Not Affected	83.1 (1.8)	88.0 (1.3)	87.1 (1.6)	91.8 (0.9)	87.3 (0.8)	
Adverse Effects, Not Dependent	12.5 (1.5)	8.3 (0.6)	9.2 (2.6)	6.0 (0.5)	9.2 (0.6)	
Dependent	4.4 (0.9)	3.7 (0.9)	3.7 (1.1)	2.2 (0.6)	3.5 (0.5)	
W1-W4						
Not Affected	96.0 (1.8)	99.0 (1.0)	+ (+)	* (*)	96.3 (1.5)	
Adverse Effects, Not Dependent	3.5 (1.7)	1.0 (1.0)	+ (+)	* (*)	3.3 (1.4)	
Dependent	0.5 (0.3)	0.0 (**)	+ (+)	* (*)	0.4 (0.3)	
01-03						
Not Affected	95.4 (1.2)	93.4 (2.5)	91.1 (7.2)	95.5 (0.8)	94.8 (0.8)	
Adverse Effects, Not Dependent	3.3 (1.1)	4.5 (1.8)	6.5 (8.2)	3.0 (0.4)	3.6 (0.7)	
Dependent	1.3 (0.6)	2.1 (0.9)	2.4 (1.0)	1.5 (0.6)	1.6 (0.4)	
04-06						
Not Affected	95.6 (1.7)	94.4 (5.3)	97.4 (2.0)	97.2 (1.6)	96.3 (1.4)	
Adverse Effects, Not Dependent	1.3 (1.4)	5.1 (5.2)	2.6 (2.0)	2.5 (1.5)	2.7 (1.3)	
Dependent	3.1 (1.4)	0.5 (0.4)	0.0 (**)	0.3 (0.2)	1.0 (0.4)	
Total						
Not Affected	75.4 (1.4)	72.9 (1.6)	72.3 (1.7)	86.4 (1.1)	77.6 (0.7)	
Adverse Effects, Not Dependent	14.1 (0.7)	15.5 (0.7)	17.4 (0.5)	9.6 (0.7)	13.5 (0.4)	
Dependent	10.5 (0.8)	11.6 (1.0)	10.3 (1.8)	4.0 (0.7)	9.0 (0.5)	

Note: Tabled values are column percentages for each pay grade group and represent prevalence estimates with standard errors in parentheses.

* Not applicable.

** Informative standard error not available.

+ Fewer than 20 respondents.

The prevalence of alcohol-related problems is further investigated in Table 6.12. This table presents general drinking characteristics, work-related characteristics, serious consequences, and drug-related characteristics among military personnel who are classified by the alcohol use problem category. Rather striking differences among the three problem categories are seen, with alcohol dependent personnel uniformly experiencing the most serious effects on work and social relationships and being by far the heaviest drinkers and drug users. Judging by each of the indicators of drinking characteristics presented in Table 6.12, there is a clear progression across the problem categories as to the frequency and quantity of drinking. For instance, those not affected have on the average experienced 2 "heavy drinking days" during the past 12 months compared with 214 days for dependent personnel. The scores of alcohol dependent persons are also much higher on the Drinking Motivation Index (constructed from five items describing reasons for drinking) and on the Military Norms about Drinking Index (constructed of six items selected by factor analysis that describe the military norms that encourage drinking but frown on the development of alcohol problems). The construction of the latter two indexes is described in Chapter 9.

Observations of work-related characteristics and drinking-related serious consequences are also presented in Table 6.12 for the alcohol use problem categories. These data indicate that alcohol dependent personnel are substantially affected at work and in their social relationships by their drinking. The one exception is that alcohol dependent persons are slightly less likely than those who have experienced adverse effects but are not dependent to have been arrested for drinking or involved in fights while drinking. Finally, alcohol dependent persons are more likely than others to also use drugs, as judged by the number of drugs used and the prevalence of frequent marijuana users.

In sum, while the prevalence of alcohol dependence is low and the most common type of drinking pattern is "not affected" by adverse effects or alcohol dependence, substantial segments of military personnel have experienced serious problems associated with their drinking. Alcohol dependence occurs least often among Air Force personnel and most often among E1-E5 personnel of all Services. Alcohol dependent persons generally experience the most serious effects on work and social relationships and are by far the heaviest drinkers and are also more involved in the use of drugs.

Table 6.12. Drinking Characteristics of Alcohol Use Problem Categories - Total DoD

Drinking Characteristics	Alcohol Use Problem Category*		
	Not Affected	Adverse Effects Not Dependent	Dependent
<u>General Drinking Characteristics</u>			
Average Daily Consumption of Ethanol (mean ounces)	0.7	3.1	5.3
Drinking Levels: Abstainer (percent)	14.5	1.6	0.5
Infrequent/Light (percent)	21.3	11.2	9.7
Moderate (percent)	34.6	17.9	7.5
Moderate/Heavy (percent)	23.7	35.2	27.7
Heavy (percent)	5.9	34.1	54.6
"Frequent" Drinkers, past 30 days (percent who drank an alcoholic beverage 11 or more days)	18.5	49.8	64.2
"Heavy" Drinkers, past 30 days (percent who had 8 or more drinks of an alcoholic beverage on typical drinking day)	7.3	35.5	60.3
Consumed 8 or more drinks a day at least once a week, past 12 months (percent)	11.2	53.8	84.2
Heavy Drinking Days, past 12 months (number of days consumed 8 or more drinks, median)	1.5	82.5	213.5
<u>Work-Related Characteristics</u>			
Agreed with "there are times at work when I need a drink" (percent)	7.5	20.4	41.9
Used alcohol before or during work on at least one work day, past 30 days (percent)	11.8	30.7	47.2
Days used alcohol before or during work, past 30 days (mean)	0.4	1.8	4.3
Days lost from work because of drinking, past 12 months (mean)	0.2	1.8	5.5
Days hospitalized because of drinking, past 12 months (mean)	0.0	0.3	1.2
<u>Drinking-Related Serious Consequences, Past 12 Months</u>			
Reported 2 or more serious consequences (percent)	0.0	33.2	44.5
Involved in accident because of drinking (percent)	0.0	16.4	20.8
Spouse left or threatened to leave because of drinking (percent)	0.0	9.7	12.4
Hit spouse or children because of drinking (percent)	0.0	7.2	13.9
Arrested for drinking (percent)	0.0	22.6	21.2
Involved in fights while drinking (percent)	0.0	25.7	18.6
<u>Drug-Related Characteristics</u>			
Number of kinds of drugs used, past 30 days (mean)	0.3	1.1	2.0
"Frequent" Marijuana Users, past 30 days (percent using 11 or more days)	3.0	12.0	21.2

*See Table 23 for description of categories.

Discussion now shifts to the demographic characteristics of alcohol problem categories (see Table 6.13). Demographic characteristics examined include sex, race/ethnicity, educational level, age, marital/accompaniment status, pay grade, time on active duty, region, and time at present duty station. Both row and column percentages are presented in Table 6.13. The "Adverse Effects or Dependent" columns contain row percentages, whereas the percentages reported under the "Total" column contain column percentages for the distributions of the demographic characteristics.

For the total DoD, personnel experiencing alcohol problems are more prevalent among males; among those with less than a high school education; among those aged 17-20; among those not married; among E1-E5 personnel; among those on active duty 4 years or less; among those stationed in the North Pacific or Europe; and among those at their present duty station 2 years or less. Differences among race/ethnic groups were small, although Hispanics were slightly more likely to have experienced problems. The overall patterns also occur for the four Services, with minor exceptions. Race/ethnic differences for the Services show the highest problems among whites in the Marine Corps, whites and blacks in the Navy, and whites, Hispanics, and other races in the Army. For geographical regions, alcohol problems were most prevalent for the Navy in the North Pacific and for the Marine Corps in the North Pacific and Other Pacific.

C. Drug Use

Attention now shifts from the negative effects associated with alcohol use to those associated with drug use. A number of the same types of analyses and indicators reported for alcohol use are also reported for drug use. Since drug use is substantially higher among E1-E5 personnel than other pay grades, the analyses are presented only for this group. As with analyses presented for alcohol use, some of the tables that follow do not report standard errors since the primary purpose of those tables is to show relationships between measures of drug use and problems rather than to provide estimates of drug use.

1. Serious Consequences of Drug Use

The prevalence of serious consequences of drug use during the past 12 months for E1-E5's is presented in Table 6.14. The types of consequences considered include work impairment, physical damage, social disruption, and other consequences. For total DoD, almost 10 percent experienced one or more

Table 6.13. Alcohol Use Problems by Socio-Demographic Characteristics

Socio-Demographic Characteristic	Service/Alcohol Use Problems									
	Army		Navy		Marine Corps		Air Force		Total DoD	
	Adverse Effects or Dependent	Total	Adverse Effects or Dependent	Total	Adverse Effects or Dependent	Total	Adverse Effects or Dependent	Total	Adverse Effects or Dependent	Total
Sex										
Male	26.3	87.9	27.8	94.3	27.8	96.1	14.4	88.9	23.6	90.6
Female	12.6	12.1	15.0	5.7	25.6	3.9	7.1	11.1	11.6	9.4
Race/Ethnicity										
White	25.3	60.8	28.4	77.6	30.6	72.3	13.0	78.3	22.9	71.2
Black	21.7	24.6	22.7	10.5	16.8	14.6	15.5	12.7	20.2	16.6
Hispanic	26.5	9.1	29.2	5.5	20.2	9.1	17.8	4.9	24.6	6.9
Other	27.2	5.5	16.4	6.4	31.3	3.9	14.0	4.1	21.0	5.2
Education										
Less than high school graduate	46.4	5.2	47.4	4.3	53.5	5.0	35.0	0.7	47.0	3.7
High school graduate or GED	31.4	50.9	31.1	56.3	28.9	57.9	19.5	33.6	28.7	48.1
Beyond high school, no 4 year degree	17.0	30.3	22.5	29.3	24.6	27.5	13.8	42.5	17.7	33.2
College graduate or higher	7.9	13.7	9.7	10.2	15.6	9.6	4.0	23.3	7.0	15.0
Age										
17-20	35.1	23.3	35.4	31.0	33.5	30.9	25.4	12.3	33.6	23.0
21-24	27.5	31.4	34.8	29.5	12.7	39.6	19.8	27.6	27.9	30.6
25-30	21.4	25.2	19.6	19.7	18.7	18.1	9.8	25.5	17.2	23.2
31 or older	12.0	20.1	10.2	19.8	10.9	11.3	7.2	34.6	9.6	23.3
Marital/Accompaniment Status										
Not married	32.6	49.5	34.7	58.9	36.0	57.0	22.6	36.4	31.6	49.0
Married, spouse not present at duty station	25.3	9.2	26.0	7.4	31.0	6.0	18.8	3.7	25.0	6.9
Married, spouse present at duty station	14.8	41.3	14.0	33.7	14.2	36.9	7.8	59.9	11.9	44.1
Paygrade										
E1-E5	29.9	70.5	33.1	74.0	32.3	78.5	18.3	61.7	28.2	69.7
E6-E9	16.9	17.4	12.1	17.5	12.9	13.0	8.1	18.2	12.7	17.3
W1-W4	3.9	2.3	1.0	0.4	5.1	0.6	*	*	3.7	1.0
O1-O3	4.6	7.4	6.6	5.4	8.9	6.0	4.5	12.3	5.2	8.1
O4-O6	4.4	2.4	5.6	2.7	2.6	1.9	2.8	7.7	3.7	3.9
Time on Active Duty										
1 year or less	25.4	16.3	30.2	27.7	28.2	13.1	17.8	7.0	26.9	16.5
>1 to 2 years	33.1	17.7	38.4	12.8	35.7	20.4	23.5	13.1	32.3	15.3
>2 to 3 years	31.3	13.2	38.2	11.0	30.9	16.4	20.5	10.3	30.4	12.1
>3 to 4 years	25.7	7.1	35.1	7.3	35.7	13.0	17.9	8.4	27.1	8.1
>4 to 9 years	21.2	27.7	23.1	22.2	21.1	22.8	10.6	26.2	18.5	25.4
10 years or more	15.4	18.0	10.1	18.9	15.0	14.3	8.2	35.0	11.1	22.7

(continued)

Table 6.13 (continued)

Region	Service/Alcohol Use Problems									
	Army		Navy		Marine Corps		Air Force		Total DoD	
	Adverse Effects or Dependent	Total	Adverse Effects or Dependent	Total	Adverse Effects or Dependent	Total	Adverse Effects or Dependent	Total	Adverse Effects or Dependent	Total
Americas	20.8	63.7	27.5	88.8	25.9	79.4	12.8	78.3	21.1	75.9
North Pacific	31.1	4.3	29.0	2.7	34.1	12.8	19.9	4.6	28.4	4.7
Other Pacific	21.8	2.2	23.7	6.0	36.4	6.5	14.9	3.4	23.0	4.0
Europe	31.9	29.8	19.1	2.5	27.5	1.2	15.5	13.7	27.2	15.4
Time at Present Duty Station										
6 months or less	22.5	30.0	26.8	40.7	26.5	23.9	13.9	20.2	22.7	29.6
7 to 12 months	28.1	27.4	26.6	17.5	28.3	28.2	16.6	16.5	25.3	21.8
>1 to 2 years	25.7	25.3	28.0	24.6	29.7	26.0	15.9	28.4	23.6	26.0
>2 to 3 years	22.9	12.2	27.8	12.7	25.1	13.2	11.0	16.9	20.2	13.7
More than 3 years	17.1	5.2	24.5	4.5	26.6	8.7	9.2	17.9	14.5	8.9
Total	24.6	-	27.1	-	27.7	-	13.6	-	22.5	100.0

Note: For each Service, values under the "Total" heading are column percentages showing the distribution across each characteristic within that Service. Values under the "Adverse Effects or Dependent" heading are row percentages showing the proportion of persons with each row's characteristic who also have experienced problems due to alcohol use.

Table 6.14. Serious Consequences of Drug Use During the Past 12 Months for E1-E5s

Consequences	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
<u>Work Impairment</u>					
Received UCMJ punishment ^b	3.4 (0.4)	3.6 (0.9)	3.2 (0.8)	1.5 (0.2)	2.9 (0.3)
Lower performance rating ^b	1.8 (0.3)	2.4 (0.4)	3.5 (0.5)	0.8 (0.1)	1.9 (0.2)
Loss of 3 or more working days	7.4 (0.7)	6.2 (0.5)	5.2 (0.9)	1.9 (0.4)	5.5 (0.3)
Total with any work impairment	9.7 (0.9)	9.0 (1.1)	8.0 (1.3)	3.3 (0.4)	7.7 (0.5)
<u>Physical Damage</u>					
Illness kept from duty 1 week or longer	1.4 (0.3)	0.8 (0.1)	0.7 (0.2)	0.2 (0.1)	0.9 (0.1)
Hospitalized for 2 or more days	0.6 (0.2)	0.4 (0.1)	0.7 (0.2)	0.1 (0.1)	0.4 (0.1)
Visited physician 2 or more times	0.7 (0.1)	0.4 (0.2)	0.4 (0.3)	0.1 (**)	0.4 (0.1)
Hurt in accident ^b	1.3 (0.2)	0.8 (0.2)	0.6 (0.4)	0.3 (0.1)	0.9 (0.1)
Had accident causing injury to others or property damage ^b	1.3 (0.3)	0.9 (0.2)	0.6 (0.4)	0.3 (0.1)	0.9 (0.1)
Total with any physical damage	2.8 (0.4)	2.1 (0.2)	1.8 (0.4)	0.5 (0.1)	1.9 (0.2)
<u>Social Disruption</u>					
Spouse left ^b	0.9 (0.1)	0.6 (0.1)	0.4 (0.2)	0.1 (0.1)	0.6 (0.1)
Spouse threatened to leave ^b	1.5 (0.2)	0.8 (0.1)	0.6 (0.3)	0.2 (0.1)	0.9 (0.1)
Arrested for driving under the influence ^b	1.1 (0.2)	0.3 (0.1)	0.4 (0.2)	0.1 (0.1)	0.6 (0.1)
Arrested for nondriving drinking incident ^b	2.2 (0.4)	1.3 (0.2)	1.3 (0.3)	0.6 (0.1)	1.5 (0.2)
Incarcerated ^b	1.6 (0.2)	0.7 (0.2)	0.9 (0.2)	0.2 (0.1)	0.9 (0.1)
Fights	0.0 (**)	0.0 (**)	0.0 (**)	0.0 (**)	0.0 (**)
Total with any social disruption	3.9 (0.4)	2.5 (0.3)	3.1 (0.6)	1.1 (0.1)	2.7 (0.2)
Total with one or more of above consequences ^a	11.2 (1.1)	10.5 (1.0)	10.0 (0.9)	3.7 (0.4)	9.0 (0.5)
<u>Other Consequences</u>					
Did not get promoted ^b	2.8 (0.3)	2.2 (0.6)	2.5 (0.6)	0.8 (0.2)	2.1 (0.2)
Detoxified	1.0 (0.1)	0.7 (0.2)	0.4 (0.2)	0.1 (0.1)	0.6 (0.1)
Hit spouse or children ^b	1.7 (0.2)	1.0 (0.3)	0.8 (0.5)	0.3 (0.1)	1.1 (0.1)
Entered rehabilitation or treatment program ^b	3.4 (0.5)	2.4 (0.6)	1.9 (0.8)	1.5 (0.2)	2.5 (0.3)
Total with any "other consequences"	5.8 (0.6)	4.7 (0.9)	4.4 (0.5)	2.1 (0.2)	4.4 (0.4)
Total with one or more of any consequences listed above	12.5 (1.0)	11.5 (0.9)	10.8 (1.0)	4.3 (0.3)	9.9 (0.5)
Total with one or more of consequences listed included in Burt and Biegel (1980) ^c	9.5 (1.0)	9.3 (1.4)	8.5 (0.3)	4.3 (0.6)	8.1 (0.6)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

^aAll items were included in the Rand Air Force Study (Polich & Orvis, 1979).

^bItems included in 1980 DoD study (Burt & Biegel, 1980).

^cAll items are from the 1980 study. "I attended a special training or education program because of my use of drugs" was excluded from the 1982 study. Because those who might respond positively to this "special training or education" item are highly likely to have responded positively to other items, the effect on the total scores for the 1980 and 1982 surveys is probably insignificant.

**Informative standard error not available.

serious consequences. The prevalence of incidents involving work impairment (8 percent) was higher than for other types of serious consequences (2 to 4 percent). Of the work impairment items, loss of working days contributed most to the index (6 percent).

Among the Services there is a consistent pattern for Army personnel to report the most consequences (13 percent) followed by the Navy (12 percent), Marine Corps (11 percent), and Air Force (4 percent). This ordering holds across all of the index totals and for most of the individual items as well.

The ordering of reported consequences agrees well with expectations based on the prevalence data presented in Chapter 5 for drug use. Recall that the Army showed greatest use and the Air Force showed least use.

Loss of productivity associated with drug use among the Services is presented in Table 6.15. The prevalence of four indicators of loss of productivity--lowered performance, late for work/left early, did not come to work, or high while working--is presented, as well as a summary measure of having experienced any of these situations. For the total DoD, 14 percent experienced some loss of productivity. The prevalence of being high while working (12 percent) occurs most often of the four indicators. However, 7 percent have experienced lowered performance and 2 to 4 percent were either late for work or did not come to work because of their drug use. Among the Services any productivity loss follows the same ordering discussed above for serious consequences with the Army being highest and the Air Force the lowest.

The number of serious consequences experienced by E1-E5's is arrayed against numbers of drugs used during the past year in Table 6.16. The data show a clear pattern. As the number of drugs used increases, the percentage who report any serious consequences also increases. For the total DoD, only 1 percent of those using no drugs during the past year experienced any serious consequences compared with 63 percent of those who used 5 or more drugs. Similarly, 1 percent or fewer of those using no drugs experienced 1 serious consequence or 2 or more serious consequences, while 27 percent of those using 5 or more drugs experienced 1 or more serious consequences and 36 percent experienced 2 or more.

The number of serious consequences experienced by E1-E5's who have used marijuana with varying degrees of frequency during the past 30 days is presented in Table 6.17. As with the association between the number of drugs used and the experience of serious consequences, there is a clear correlation between

Table 6.15. Loss of Productivity Because of Drug Use During the Past 12 Months for E1-E5's

Productivity Item	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
Lowered Performance	8.3	(0.9)	7.9	(0.5)	5.9	(0.2)	3.1	(0.4)	6.7	(0.4)
Late for Work/Left Work Early	5.2	(0.5)	4.0	(0.5)	3.4	(0.5)	2.0	(0.2)	3.9	(0.2)
Did Not Come to Work	2.3	(0.3)	1.8	(0.5)	1.4	(0.4)	0.4	(0.1)	1.6	(0.2)
High While Working	15.2	(1.4)	12.9	(0.9)	10.3	(0.5)	5.9	(0.3)	11.8	(0.6)
Total With Any Productivity Loss	17.8	(1.5)	15.1	(0.8)	11.3	(0.6)	7.0	(0.4)	13.7	(0.6)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

Table 6.16. Number of Different Serious Consequences by Number of Drugs Used Past Year for E1-E5's

Service/Number of Consequences	Number of Drugs Used Past Year					
	None	1	2	3	4	5 or More
Army						
No serious consequences	98.7	81.9	74.7	59.4	52.7	30.8
1 serious consequence	.8	12.6	13.5	29.4	27.5	29.9
2 or more serious consequences	.4	5.5	11.8	11.2	19.8	39.3
Total, any serious consequences	1.2	18.1	25.3	40.6	47.3	69.2
Navy						
No serious consequences	98.1	84.8	73.4	70.6	47.3	38.3
1 serious consequence	1.4	9.6	18.8	18.6	44.0	24.4
2 or more serious consequences	0.5	5.5	7.9	10.8	8.7	37.3
Total, any serious consequences	1.9	15.1	26.7	29.4	52.7	61.7
Marine Corps						
No serious consequences	98.1	85.2	78.2	59.9	43.1	45.1
1 serious consequence	1.5	9.6	11.6	19.8	17.6	28.7
2 or more serious consequences	0.4	5.2	10.2	20.3	39.3	26.2
Total, any serious consequences	1.9	14.8	21.8	40.1	56.9	54.9
Air Force						
No serious consequences	99.3	88.6	86.4	73.4	72.0	52.4
1 serious consequence	0.6	7.6	8.1	17.6	14.4	26.9
2 or more serious consequences	0.1	3.8	5.5	9.0	13.6	20.7
Total, any serious consequences	0.7	11.4	13.6	26.6	28.0	47.6
Total DoD						
No serious consequences	98.6	84.3	76.5	65.0	52.1	37.2
1 serious consequence	1.0	10.5	14.1	23.1	29.9	27.3
2 or more serious consequences	0.3	5.1	9.4	11.9	18.0	35.6
Total, any serious consequences	1.3	15.6	23.5	35.0	47.9	62.9

Note: For each Service, tabled values are column percentages and the first three rows total 100 percent, within rounding error. The "total" row within each Service is the sum of the preceding two consequence rows (i.e., 1 ..., 2 or more...) for that Service.

Table 6.17. Number of Different Serious Consequences by Frequency of Marijuana Use Past 30 Days for E1-E5's

Service/Number of Consequences	Frequency of Marijuana Use Past 30 Days				
	Never	1-3 Days	4-10 Days	11-19 Days	20-27 Days
Army					
No serious consequences	97.3	84.5	67.6	59.5	46.7
1 serious consequence	1.7	10.3	17.1	23.6	35.4
2 or more serious consequences	1.0	5.2	15.3	16.9	17.9
Total, any serious consequences	2.7	15.5	32.4	40.5	53.3
Navy					
No serious consequences	93.7	83.7	59.0	46.1	34.0
1 serious consequence	4.2	10.8	22.3	30.5	41.3
2 or more serious consequences	2.1	5.5	18.7	23.4	24.7
Total, any serious consequences	6.3	16.3	41.0	53.9	66.0
Marine Corps					
No serious consequences	95.8	84.2	72.5	62.7	34.9
1 serious consequence	2.7	8.8	10.7	17.9	34.1
2 or more serious consequences	1.5	7.0	16.8	19.4	31.0
Total, any serious consequences	4.2	15.8	27.5	37.3	65.1
Air Force					
No serious consequences	98.6	89.8	87.3	67.9	48.8
1 serious consequence	1.0	7.4	8.0	18.2	31.0
2 or more serious consequences	0.4	2.8	4.7	13.9	20.2
Total, any serious consequences	1.4	10.2	12.7	32.1	51.2
Total DoD					
No serious consequences	96.4	85.3	69.2	59.1	43.0
1 serious consequence	2.4	9.7	16.3	23.1	36.0
2 or more serious consequences	1.2	5.0	14.5	17.7	21.1
Total, any serious consequences	3.6	14.7	30.8	40.8	57.1

Note: For each Service, tabled values are column percentages and the first three rows total 100%, within rounding error. The "Total" row within each Service is the sum of the preceding two consequence rows (i.e., 1..., 2 or more...) for that Service.

the frequency of marijuana use during the past 30 days and the number of serious consequences experienced. For the total DoD, 4 percent of those who did not use marijuana during the past 30 days experienced any serious consequences compared with 59 percent who used marijuana almost every day. As expected, for all comparisons the percentage of Air Force personnel experiencing 1, 2, or more, or any serious consequences is the lowest of the Services.

In summary, many E1-E5 military personnel, almost 10 percent, have experienced serious consequences associated with their drug use during the past year, involving instances of work impairment, physical damage, social disruption, and other consequences. Work impairment is the most frequently occurring consequence. Some loss of productivity was experienced by 14 percent of the participants. The prevalence of serious consequences or loss of productivity is highest for the Army and lowest for the Air Force. Finally, a clear association was observed between the number of serious consequences and the number of drugs used during the past year and the frequency of marijuana use during the past 30 days. As the frequency of use increases so do the number of consequences.

2. Drug Dependence

The prevalence of drug dependence and its relation to the number of drugs used and the experience of serious consequences are examined in Tables 6.18 to 6.21. Among all E1-E5's, almost 2 percent have experienced symptoms during the past year by which they might be classified as drug dependent. That is, they used addictive drugs nearly every day, or were detoxified because of drug use, or experienced withdrawal-type symptoms after stopping use of addictive or nonaddictive drugs. Drug dependence is somewhat more prevalent among the Army, Navy, and Marine Corps (2 percent) than the Air Force (.5 percent).

Drug dependence as expected is closely associated with the number of drugs used during the past year. The prevalence of drug dependence increases systematically with the number of drugs used (see Table 6.19). For the total DoD, less than 1 percent who used no drugs during the past year were classified as drug dependent compared with 28 percent of those who used 5 or more drugs. The level of dependence tends to be lower among Air Force personnel than among personnel of the other Services for most comparisons.

There is also a strong relationship between drug dependence among E1-E5's personnel and the number of serious consequences experienced because of drug

Table 6.18. Drug Dependence During the Past 12 Months for E1-E5's

Type of Dependence	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
Physiological and/or Psychological	2.2	(0.3)	2.1	(0.4)	1.5	(0.1)	0.5	(0.2)	1.6	(0.2)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

Table 6.19. Drug Dependence by Number of Drugs Used Past Year for E1-E5's

Service/Dependence Status	Number of Drugs Used Past Year					
	None	1	2	3	4	5 or More
Army						
Not dependent	99.8	97.6	96.2	92.6	85.7	65.3
Dependent	0.2	2.4	3.8	7.4	14.3	34.7
Navy						
Not dependent	99.7	98.0	92.2	88.7	95.4	77.5
Dependent	0.3	2.0	7.8	11.3	4.6	22.5
Marine Corps						
Not dependent	99.9	99.3	97.8	99.1	91.5	65.4
Dependent	0.1	0.7	2.2	0.9	8.5	34.6
Air Force						
Not dependent	100.0	98.6	97.2	99.0	92.3	82.8
Dependent	0.0	1.4	2.8	1.0	7.7	17.2
Total DoD						
Not dependent	99.8	98.1	95.3	92.9	90.5	71.9
Dependent	0.2	1.9	4.7	7.1	9.5	28.1

Note: Table entries are column percentages for each service.

use, as seen in Table 6.20. For the total DoD, only 9 percent of those who are not drug dependent have experienced serious consequences, compared with 72 percent of those who are drug dependent. Similar patterns are seen for having experienced 1, or 2 or more, serious consequences among drug-dependent and nondrug-dependent personnel. Drug dependent Air Force personnel are less likely than personnel of other branches to experience any serious consequences.

Similar to symptoms indicating drug dependence are indicators of drug abuse such as using more drugs than planned to, staying high more than a day at a time, becoming severely sick, or skipping 3 or more meals while using drugs. The prevalence of each of these indicators during the past 12 months among E1-E5's is presented in Table 6.21. Occurrence of either of the first two indicators of drug abuse was reported by 11 percent of personnel and occurrence of any of the four indicators during the past 12 months was reported by 14 percent. Of the four indicators the prevalence of staying high more than a day at a time happens most often. Ranking of the Services on the indicators shows the Army (17 percent), Navy (15 percent), Marine Corps (13 percent) and Air Force (7 percent).

In sum, almost 2 percent of all E1-E5 military personnel experienced symptoms during the past year by which they might be classified as drug dependent. Drug dependence is lower among Air Force personnel than personnel of the other three Services and is closely associated with the number of drugs used during the past year and the number of serious consequences.

D. Summary of Negative Effects

Substantial segments of military personnel have experienced serious consequences arising from alcohol and drug use; 18 percent have experienced serious alcohol-related consequences and 10 percent serious drug-related consequences. Alcohol use is more likely to result in consequences involving social disruption and physical damage, while drug use is more likely to result in work impairment. About 34 percent have experienced alcohol-related loss of productivity, while 14 percent have experienced drug-related loss of productivity. Dependence on either drugs or alcohol is closely associated with levels of consumption and the number of serious consequences. This summary highlights some of the more specific findings.

1. Alcohol Use

Negative effects associated with alcohol use are evident among all Services and are closely associated with the level of alcohol consumption.

Table 7.6. Companions With Whom Alcohol Used Most Frequently During Past 12 Months by Drinking Levels

Service/Companions While Drinking	Drinking Levels				
	Abstainers	Infrequent Light	Moderate	Moderate/Heavy	Heavy
Army					
Alone, with no one else around	3.8	22.3	20.7	23.6	20.6
With mate or date	14.0	46.6	48.4	39.2	24.1
With close friends, military only	1.1	13.3	21.1	26.0	37.8
With close friends, including civilians	2.2	7.0	5.9	7.2	10.9
With co-workers	0.3	2.0	1.9	2.6	4.8
With only acquaintances or strangers	0.0	0.0	0.3	0.4	0.7
Navy					
Alone, with no one else around	4.8	18.2	18.0	17.9	18.6
With mate or date	13.3	43.1	50.2	41.1	31.6
With close friends, military only	3.5	14.3	19.6	27.1	32.5
With close friends, including civilians	9.6	16.7	10.4	10.2	12.4
With co-workers	1.1	1.6	1.1	2.8	3.7
With only acquaintances or strangers	0.0	0.3	0.4	0.7	1.0
Marine Corps					
Alone, with no one else around	1.5	13.5	17.0	15.9	16.8
With mate or date	9.4	46.2	50.7	36.9	24.4
With close friends, military only	2.5	19.7	23.6	38.2	43.8
With close friends, including civilians	2.5	7.1	5.5	6.2	11.5
With co-workers	0.2	5.6	3.0	1.6	3.1
With only acquaintances or strangers	1.2	1.0	0.0	1.1	0.3
Air Force					
Alone, with no one else around	4.7	20.1	19.6	19.4	24.1
With mate or date	16.0	57.9	58.9	48.3	33.5
With close friends, military only	2.5	8.3	13.8	23.0	25.9
With close friends, including civilians	2.0	5.1	5.4	6.6	10.8
With co-workers	1.6	1.8	1.9	2.2	5.1
With only acquaintances or strangers	0.1	0.2	0.2	0.3	0.2
Total DoD					
Alone, with no one else around	4.1	19.9	19.4	20.1	20.2
With mate or date	14.0	48.7	52.5	41.9	28.2
With close friends, military only	2.2	12.6	18.6	26.8	34.5
With close friends, including civilians	3.9	9.4	6.7	7.8	11.4
With co-workers	0.9	2.1	1.8	2.5	4.3
With only acquaintances or strangers	0.2	0.2	0.3	0.5	0.7

Note: Tabled values are row percentages. A slight inconsistency appears in the data. Abstainers should not be reporting any drinking. This is partly explained by the definition of abstained which include those who drink one a year or less (see Table 4)).

Table 7.5. Place Alcohol Used Most Frequently During Past 12 Months by Drinking Levels

Service/Drinking Places	Drinking Levels				
	Abstainers	Infrequent Light	Moderate	Moderate/Heavy	Heavy
Army					
Driving around or sitting in a car	2.1	8.6	6.7	8.8	9.2
Enlisted, NCO, or officers' club	7.8	27.1	26.5	19.6	13.6
Own quarters, including ships	7.4	38.3	49.2	55.7	57.3
Civilian bar, tavern, nightclub, lounge	1.5	9.4	10.1	11.4	14.1
On-base homes of friends	1.1	2.5	1.6	1.4	2.5
Off-base homes of friends	1.1	4.0	3.0	1.8	1.9
Out in the open (e.g., sports event, picnic)	0.4	2.1	1.7	0.8	0.9
Navy					
Driving around or sitting in a car	7.1	14.3	6.3	10.1	14.3
Enlisted, NCO, or officers' club	7.3	21.3	26.9	23.3	18.9
Own quarters, including ships	7.8	28.4	41.9	38.3	31.8
Civilian bar, tavern, nightclub, lounge	3.9	19.1	16.4	19.4	25.8
On-base homes of friends	0.1	1.4	1.6	0.8	1.3
Off-base homes of friends	2.0	4.4	5.4	6.4	5.3
Out in the open (e.g., sports event, picnic)	1.5	2.9	1.0	1.6	2.2
Marine Corps					
Driving around or sitting in a car	0.3	8.7	7.3	12.1	7.6
Enlisted, NCO, or officers' club	1.5	26.9	26.5	24.1	16.6
Own quarters, including ships	5.1	31.2	47.3	37.1	45.2
Civilian bar, tavern, nightclub, lounge	6.8	13.7	12.5	18.1	23.7
On-base homes of friends	1.3	1.0	1.5	0.3	0.2
Off-base homes of friends	2.1	7.7	3.4	5.9	5.9
Out in the open (e.g., sports event, picnic)	0.1	0.8	1.5	2.3	0.7
Air Force					
Driving around or sitting in a car	0.7	3.3	3.7	4.7	4.6
Enlisted, NCO, or officers' club	8.6	36.7	29.3	16.9	20.0
Own quarters, including ships	10.2	44.6	57.1	66.7	63.2
Civilian bar, tavern, nightclub, lounge	2.4	5.4	6.5	7.7	8.0
On-base homes of friends	0.5	1.1	0.6	1.1	1.5
Off-base homes of friends	1.7	2.5	1.6	1.8	1.4
Out in the open (e.g., sports event, picnic)	1.0	1.4	1.0	0.9	0.8
Total DoD					
Driving around or sitting in a car	2.7	8.8	5.7	8.4	9.7
Enlisted, NCO, or officers' club	7.3	28.0	27.5	20.4	16.7
Own quarters, including ships	8.1	36.6	50.0	51.9	49.3
Civilian bar, tavern, nightclub, lounge	2.9	11.5	10.6	13.3	17.5
On-base homes of friends	0.7	1.7	1.3	1.1	1.7
Off-base homes of friends	1.6	4.0	3.1	3.5	3.3
Out in the open (e.g., sports event, picnic)	0.8	2.1	1.3	1.2	1.3

Note: Tabled values are row percentages.

next highest proportions as those with whom alcohol was used most frequently were close friends from the military (20 percent of total DoD personnel) and alone (18 percent of total DoD personnel).

Differences in drinking places among drinking levels are seen in Table 7.5, which presents percentages of each drinking level category naming each place as the one where alcohol is used most frequently during the past 12 months. For all drinking levels, for the total DoD and all Services, more personnel drink most often in their own quarters followed by civilian bars and military clubs. More heavy drinkers named cars or bars as their most frequent drinking place, and fewer (than their counterparts who drink less) drink most frequently in their own quarters or military clubs. While most drinkers drink most frequently in places such as their own quarters or clubs, heavy drinkers were somewhat more likely to drink most frequently in cars or bars.

Differences in drinking companions among drinking levels are seen in Table 7.6 which presents percentages of each drinking level category naming each type of companions as the one with whom alcohol is used most frequently during the past 12 months. For the total DoD and all Services, most personnel drink most frequently with a mate or date, except more heavy drinkers drink most often with military friends.

Differences in drinking places among alcohol use problem categories are seen in Table 7.7, which presents percentages of persons in each problem category naming each place as the one where alcohol was used most frequently during the past 12 months. For the total DoD, all Services and all three problem categories, personnel were most likely to drink most often in their own quarters. Further, as the level of alcohol problems increased, the percentages drinking most often in cars and civilian bars increased. Dependent drinkers were about three times more likely than those not affected to drink most often in cars and twice as likely as those not affected to drink most often in bars.

Differences in drinking companions among alcohol use problem categories are seen in Table 7.8, which presents percentages of persons in each problem category naming each type of companion as the one with whom alcohol was used most frequently during the past 12 months. For the total DoD and most of the Services, drinking companions for not affected and affected but not dependent groups were most likely to be mates or dates, while military friends were

Table 7.4. Companions With Whom Alcohol Used Most Frequently During Past 12 Months

Pay Grade/Companions While Drinking	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
E1-E5					
Alone, with no one else around	19.0	16.0	14.2	18.7	17.6
With mate or date	33.6	35.0	29.9	42.5	35.9
With close friends, military only	24.9	24.5	33.0	18.0	23.9
With close friends, including civilians	8.0	13.9	7.6	6.8	9.3
With co-workers	2.7	2.3	2.2	2.5	2.5
With only acquaintances or strangers	0.3	0.5	0.9	0.3	0.4
E6-E9					
Alone, with no one else around	24.5	21.7	17.6	22.5	22.7
With mate or date	40.8	45.2	51.6	48.6	45.0
With close friends, military only	14.0	10.9	9.6	10.9	11.9
With close friends, including civilians	4.9	7.2	3.7	4.9	5.5
With co-workers	2.3	1.6	4.4	1.9	2.2
With only acquaintances or strangers	0.1	0.8	0.0	0.0	0.3
W1-W4					
Alone, with no one else around	14.3	28.8	+	*	15.0
With mate or date	57.0	45.1	+	*	58.1
With close friends, military only	11.6	5.6	+	*	10.4
With close friends, including civilians	0.6	0.0	+	*	0.5
With co-workers	0.0	0.0	+	*	0.0
With only acquaintances or strangers	0.1	0.0	+	*	0.1
O1-O3					
Alone, with no one else around	20.6	12.7	10.6	15.8	16.5
With mate or date	56.4	60.8	65.3	62.9	60.5
With close friends, military only	10.8	13.5	8.4	9.8	10.7
With close friends, including civilians	2.7	6.6	0.6	3.2	3.5
With co-workers	1.1	1.3	4.0	1.9	1.7
With only acquaintances or strangers	0.4	0.0	0.0	0.3	0.3
O4-O6					
Alone, with no one else around	11.1	10.1	2.0	8.3	9.0
With mate or date	75.6	80.0	83.3	72.5	75.1
With close friends, military only	5.7	2.6	14.2	5.3	5.3
With close friends, including civilians	3.3	2.8	0.0	3.1	3.0
With co-workers	0.1	0.0	0.0	1.2	0.7
With only acquaintances or strangers	0.0	0.2	0.0	0.0	0.0
Total					
Alone, with no one else around	19.8	16.7	14.1	18.2	18.3
With mate or date	38.1	39.5	36.3	48.4	41.2
With close friends, military only	21.2	20.8	27.9	14.7	19.9
With close friends, including civilians	6.8	12.0	6.5	5.7	7.8
With co-workers	2.4	2.1	2.6	2.2	2.3
With only acquaintances or strangers	0.3	0.5	0.7	0.2	0.4

Note: Tabled values are percentages.

+ Fewer than 20 respondents.

* Not applicable.

Table 7.3. Place Alcohol Used Most Frequently During Past 12 Months

Pay Grade/Drinking Places	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
E1-E5					
Driving around or sitting in a car	9.4	13.2	9.5	5.2	9.4
Enlisted, NCO, or officer's club	18.7	20.9	19.7	22.0	20.3
Own quarters, including ships	42.1	26.2	30.5	49.8	38.3
Civilian bar, tavern, nightclub, lounge	12.0	21.2	19.3	7.5	14.2
On-base quarters of friends	2.2	1.4	1.0	1.1	1.6
Off-base homes of friends	3.1	5.9	6.0	2.2	4.0
Out in the open (e.g., sports event, picnic)	1.7	2.2	1.6	1.1	1.7
E6-E9					
Driving around or sitting in a car	3.7	3.1	4.5	1.7	3.0
Enlisted, NCO, or officer's club	20.7	21.5	23.2	27.5	23.1
Own quarters, including ships	54.6	47.9	56.6	51.7	52.0
Civilian bar, tavern, nightclub, lounge	6.3	10.4	0.9	5.3	6.8
On-base quarters of friends	0.8	0.3	0.2	0.2	0.5
Off-base homes of friends	0.8	3.6	1.1	0.8	1.6
Out in the open (e.g., sports event, picnic)	0.6	1.1	0.4	1.6	1.0
W1-W4					
Driving around or sitting in a car	0.0	1.5	+	*	0.2
Enlisted, NCO, or officer's club	27.8	9.3	+	*	26.9
Own quarters, including ships	53.7	52.4	+	*	53.5
Civilian bar, tavern, nightclub, lounge	1.7	16.3	+	*	3.0
On-base quarters of friends	1.4	0.0	+	*	1.2
Off-base homes of friends	0.0	0.0	+	*	0.1
Out in the open (e.g., sports event, picnic)					0.0
O1-O3					
Driving around or sitting in a car	1.5	2.1	0.4	0.3	1.0
Enlisted, NCO, or officer's club	37.8	30.5	25.5	31.5	33.0
Own quarters, including ships	44.8	54.2	55.6	54.3	51.2
Civilian bar, tavern, nightclub, lounge	4.6	6.9	2.5	5.0	5.0
On-base quarters of friends	0.8	0.1	0.0	0.8	0.6
Off-base homes of friends	2.3	2.1	2.1	1.4	1.9
Out in the open (e.g., sports event, picnic)	0.0	0.0	0.0	0.6	0.3
O4-O6					
Driving around or sitting in a car	2.8	0.1	0.0	0.5	0.9
Enlisted, NCO, or officer's club	23.0	17.8	32.9	23.3	22.6
Own quarters, including ships	68.5	74.5	66.5	64.4	67.3
Civilian bar, tavern, nightclub, lounge	0.3	2.2	0.0	0.4	0.7
On-base quarters of friends	1.3	1.2	0.0	0.8	1.0
Off-base homes of friends	0.0	0.0	0.0	1.1	0.6
Out in the open (e.g., sports event, picnic)	0.3	0.0	0.0	0.0	0.1
Total					
Driving around or sitting in a car	7.4	10.4	8.0	3.6	7.2
Enlisted, NCO, or officer's club	20.7	21.4	20.9	24.3	21.9
Own quarters, including ships	45.3	32.9	36.2	51.8	43.0
Civilian bar, tavern, nightclub, lounge	9.9	18.0	15.4	6.2	11.5
On-base quarters of friends	1.8	1.2	0.8	0.9	1.3
Off-base homes of friends	2.5	5.1	5.0	1.8	3.2
Out in the open (e.g., sports event, picnic)	1.3	1.8	1.3	1.0	1.4

Note: Tabled values are percentages.

+ Fewer than 20 respondents.

* Not applicable.

types of companions in the past year. Fewer than half of all persons drank alcohol alone or with only acquaintances or strangers. These data confirm that drinking tends to be a social experience engaged in with friends, family, and co-workers.

Looking at the types of companions present when drinking occurred weekly or more often, all DoD personnel were also more likely to have drunk alcohol this frequently with the same sorts of persons -- with a mate or date, with either close military or civilian friends, or with co-workers. However, there was more variation across pay grades and branches of the Service. Twenty-seven to 32 percent of all E1-E5's reported drinking alcohol weekly or more often with all these persons; though that many E6's and above reported drinking this often with a mate or date, the percentages were lower for the other types of persons. Similarly, a fourth or more of the personnel in the Army, Navy, and Marine Corps drank alcohol that frequently with all the types of companions in that set, while that many Air Force personnel drink alcohol weekly with only a mate or date. Even so, while there is some variation in the companions with whom military personnel drink, all persons were much more likely to drink in the company of others.

Most personnel in all Services and pay grades named their own quarters as the place where drinking occurs most often, as seen in Table 7.3 which presents percentages naming each place as the one where alcohol was used most frequently during the past 12 months. For the total DoD, 43 percent most often drank alcohol in their own quarters during the past year; own quarters was especially likely to be the place drinking occurred most often among senior officers (67 percent for 04-06 personnel) and among Army and Air Force personnel (45 and 52 percent, respectively). The place named as the most frequent place of drinking by the next highest proportion of persons was enlisted, NCO, or officer's clubs for all pay grades and branches of the Service.

Mate or date is the companion named by most personnel of all Services and pay grades as the person most frequently present when drinking alcohol, as seen in Table 7.4 which presents percentages naming each of the types of companions as the one with whom drinking most frequently occurred during the past 12 months. For the total DoD, 41 percent drank alcohol more frequently with their mate or date than with other companions and this percentage rises with pay grade (75 percent for 04-06 personnel). The companions named by the

Table 7.2. Frequency of Alcohol Use With Different Companions During Past 12 Months

Pay Grade/Companions While Drinking	Service/Frequency of Alcohol Use											
	Army			Navy			Marine Corps			Air Force		
	Never	More Often	Weekly or	Never	More Often	Weekly or	Never	More Often	Weekly or	Never	More Often	Total DoD Weekly or
E1-E5												
Alone, with no one else around	45.6	15.1	14.4	45.5	14.4	50.7	11.4	47.4	11.6	46.5	13.7	
With mate or date	28.3	27.8	30.1	23.7	30.1	34.0	22.3	24.8	25.0	26.7	27.2	
With close friends, military only	23.6	34.5	35.3	25.4	35.3	22.8	38.6	26.1	24.1	24.7	32.6	
With close friends, including civilians	24.6	29.9	37.7	16.0	37.7	24.9	28.3	22.4	22.5	21.6	30.1	
With co-workers	31.6	27.7	31.8	26.4	31.8	26.4	32.4	28.7	18.3	28.9	27.0	
With only acquaintances or strangers	64.1	5.3	6.2	56.4	6.2	60.9	5.0	63.9	3.4	61.5	5.0	
E6-E9												
Alone, with no one else around	48.4	14.0	11.4	51.7	11.4	50.8	11.9	47.6	10.6	49.2	12.1	
With mate or date	27.8	22.8	24.7	24.5	24.7	23.3	24.6	19.8	22.7	24.3	23.4	
With close friends, military only	27.2	16.7	13.7	25.9	13.7	29.7	14.9	27.3	11.9	27.1	14.3	
With close friends, including civilians	28.9	13.7	15.3	22.1	15.3	28.5	12.4	22.0	12.0	25.0	13.6	
With co-workers	32.5	13.3	11.7	25.4	11.7	31.4	12.1	25.6	9.5	28.5	11.6	
With only acquaintances or strangers	67.0	2.8	2.6	61.6	2.6	68.8	0.5	60.6	2.3	63.8	2.5	
W1-W4												
Alone, with no one else around	54.5	9.5	28.8	32.8	28.8	+	+	+	+	51.9	11.0	
With mate or date	24.1	22.2	36.7	22.7	36.7	+	+	+	+	22.7	25.1	
With close friends, military only	22.9	13.0	3.1	20.5	3.1	+	+	+	+	21.4	13.8	
With close friends, including civilians	23.7	11.5	18.1	23.9	18.1	+	+	+	+	22.5	14.0	
With co-workers	26.7	9.3	1.2	23.0	1.2	+	+	+	+	24.9	8.1	
With only acquaintances or strangers	68.8	2.0	1.0	44.6	1.0	+	+	+	+	65.4	1.8	
01-03												
Alone, with no one else around	46.0	11.6	10.2	38.9	10.2	47.4	3.9	49.6	10.7	46.4	10.5	
With mate or date	15.1	27.4	38.2	13.0	38.2	19.5	30.2	13.1	28.2	14.2	29.9	
With close friends, military only	17.5	17.3	20.9	15.4	20.9	19.2	15.1	23.5	13.0	19.8	16.0	
With close friends, including civilians	17.6	13.2	18.5	13.7	18.5	13.6	12.0	15.6	9.4	15.8	12.4	
With co-workers	23.7	12.5	22.4	15.9	22.4	23.3	14.6	20.4	10.6	20.9	13.6	
With only acquaintances or strangers	67.2	0.9	2.1	66.0	2.1	68.0	0.0	68.3	1.8	67.5	1.4	
04-06												
Alone, with no one else around	51.6	6.3	10.3	43.1	10.3	34.9	9.5	43.7	8.3	45.0	8.3	
With mate or date	7.7	46.8	57.5	5.3	57.5	0.5	64.8	12.1	50.7	9.3	51.8	
With close friends, military only	12.9	9.5	13.9	7.0	13.9	11.5	9.5	18.9	11.7	15.0	11.5	
With close friends, including civilians	9.7	7.5	15.0	7.5	15.0	25.8	4.5	11.7	10.8	11.1	10.6	
With co-workers	21.3	5.0	11.9	7.6	11.9	17.5	8.3	16.1	8.9	15.7	8.6	
With only acquaintances or strangers	66.4	0.6	0.7	59.7	0.7	75.7	0.7	57.4	0.7	60.6	0.7	
Total												
Alone, with no one else around	46.5	14.3	13.6	46.1	13.6	50.1	10.9	47.5	11.0	47.0	12.9	
With mate or date	26.7	27.2	30.4	22.7	30.4	30.9	24.1	21.5	27.0	24.5	27.7	
With close friends, military only	23.5	29.0	30.1	24.4	30.1	23.2	33.6	25.5	19.6	24.3	27.1	
With close friends, including civilians	24.5	24.9	32.1	16.7	32.1	24.9	24.9	20.6	18.1	21.3	24.9	
With co-workers	30.8	23.1	27.1	25.1	27.1	26.5	28.0	26.1	15.1	27.6	22.3	
With only acquaintances or strangers	65.0	4.4	5.2	57.9	5.2	62.5	4.0	63.4	2.8	62.4	4.1	

Note: Tabled values are percentages.

+ Fewer than 20 respondents.

* Not applicable.

Table 7.1. Frequency of Alcohol Use in Different Places During Past 12 Months

Pay Grade/Drinking Places	Service/Frequency of Alcohol Use										Total DoD
	Army			Navy			Marine Corps			Air Force	
	Never	Weekly or More Often		Never	Weekly or More Often		Never	Weekly or More Often		Never	Weekly or More Often
E1-E5											
Driving around or sitting in a car	62.5	11.0		54.9	14.3		56.6	9.8		70.0	4.6
Enlisted, NCO, or officers' club	46.5	15.3		42.4	17.9		43.8	15.0		40.5	11.9
Own quarters, including ships	26.5	38.2		54.2	24.5		44.7	27.2		17.9	37.1
Civilian bar, tavern, lounge,	30.5	25.7		25.4	34.4		29.6	24.7		33.6	15.3
On-base quarters of friends	47.3	15.3		70.0	7.5		63.9	7.8		49.4	8.3
Off-base homes of friends	35.3	17.0		29.6	23.9		30.3	20.4		30.0	12.3
Out in the open (e.g., sports event)	34.6	10.3		29.4	13.2		27.8	10.7		34.8	5.7
E6-E9											
Driving around or sitting in a car	79.1	3.3		82.1	2.3		75.6	4.4		85.2	1.6
Enlisted, NCO, or officers' club	39.4	11.7		38.4	6.0		31.8	7.3		32.1	11.2
Own quarters, including ships	19.5	38.2		27.7	31.2		17.7	38.1		15.3	33.9
Civilian bar, tavern, lounge	38.9	11.4		29.4	14.6		45.7	9.6		33.1	9.6
On-base quarters of friends	46.6	4.2		62.8	2.6		53.2	2.8		51.2	2.3
Off-base homes of friends	42.0	5.4		26.9	6.1		36.0	4.6		32.7	3.8
Out in the open (e.g., sports event)	41.7	3.8		30.7	2.5		32.0	5.9		34.1	3.0
O1-O3											
Driving around or sitting in a car	78.5	2.5		69.5	2.4		74.2	0.3		85.5	0.9
Enlisted, NCO, or officers' club	19.9	18.9		16.4	16.2		18.4	14.1		22.0	9.0
Own quarters, including ships	16.4	39.2		17.6	46.7		22.1	34.6		10.5	38.4
Civilian bar, tavern, lounge,	32.5	7.9		20.4	15.9		32.0	9.9		24.1	9.5
On-base quarters of friends	39.1	3.5		71.8	1.5		46.0	4.1		57.6	1.9
Off-base homes of friends	21.9	5.2		13.8	11.3		23.5	3.4		20.2	5.8
Out in the open (e.g., sports event)	35.2	2.7		28.7	2.9		30.6	2.4		34.1	1.2
O4-O6											
Driving around or sitting in a car	87.5	1.2		81.8	2.5		88.0	0.0		86.7	0.9
Enlisted, NCO, or officers' club	15.5	8.0		10.6	11.8		3.2	5.6		18.4	9.7
Own quarters, including ships	6.0	51.7		6.2	67.4		0.5	65.7		11.7	57.4
Civilian bar, tavern, lounge,	29.7	28.0		20.7	7.7		46.3	1.8		28.9	5.2
On-base quarters of friends	20.5	1.3		54.4	0.5		13.9	0.0		46.5	2.7
Off-base homes of friends	19.5	4.1		8.9	10.7		28.2	3.7		17.5	3.1
Out in the open (e.g., sports event)	28.2	1.2		17.3	0.6		19.1	0.0		27.0	1.1
Total ^a											
Driving around or sitting in a car	67.7	8.6		61.3	11.1		60.7	8.3		76.0	3.3
Enlisted, NCO, or officers' club	42.0	14.7		39.3	32.0		39.7	13.7		35.0	25.2
Own quarters, including ships	23.9	38.5		46.2	28.1		38.8	29.9		16.0	38.2
Civilian bar, tavern, lounge,	32.3	20.9		25.7	29.1		32.2	21.3		32.0	12.7
On-base quarters of friends	45.8	11.9		68.4	6.1		60.3	7.0		50.5	6.0
Off-base homes of friends	35.2	13.5		27.7	19.7		30.5	16.9		28.3	20.5
Out in the open (e.g., sports event)	35.8	8.2		29.2	10.4		28.5	9.3		34.0	4.3
							</				

Note: Table entries are percentages.

^aTotal includes W1-W4s.

From these two items, measures of the frequency with which military personnel used alcohol or drugs in different places and with different people were developed, as well as measures of the places and companions with whom alcohol or drug use is most frequent. Although places where and persons with whom military personnel use alcohol or drugs are described separately here, it should be remembered that only by considering both elements together can the context of use be completely described.

B. Alcohol Use

The context of alcohol use is investigated by examining the frequency with which alcohol is used in different places and with different companions. The place and companions with whom alcohol is used most frequently are identified and examined for the different drinking level and alcohol use problem categories. These analyses are presented for the Services and pay grades.

Percentages for the frequency with which military personnel drank alcohol in various places are presented in Table 7.1. For the total DoD, personnel were more likely to have drunk alcohol during the past 12 months in their own quarters, a civilian bar, or the off-base homes of friends than in a car, a military club, on-base homes of friends, or in the open, as judged by the complement of the percentages in the "Never" column. About 70 percent had drunk alcohol in each of those three places during the past year. This trend also holds true for each of the branches of the Service and the pay grades with minor exceptions. More personnel from the total DoD, in each of the pay grades, and most Services reported drinking alcohol weekly or more often in their own quarters. Among Navy personnel, more individuals reported drinking alcohol this frequently in enlisted, NCO, or officers' clubs. Thus, most military personnel more often drink in expected places, in their own quarters or bars or off-base homes of friends. Drinking occurs less often than expected in clubs provided by the military, while drinking in cars (for total DoD, 8 percent weekly or more often, 32 percent at least once) occurs more frequently than expected.

Percentages for the frequency with which military personnel drank alcohol with various types of companions are presented in Table 7.2. For the total DoD, all the pay grades and all Services, personnel were more likely to have drunk alcohol during the past 12 months (the complement of "Never") with a mate or date, with close military or civilian friends, or with co-workers; about three-fourths of all personnel had drunk alcohol with each of those

7. THE CONTEXT OF ALCOHOL AND DRUG USE

The use of alcohol and drugs by military personnel occurs in a number of different contexts, both on- and off-base, in public and private places, with other military personnel or civilians or alone.

Analyses presented in this chapter describe the context of use of alcohol and drugs, particularly focusing on where and with whom they are used. The frequency of alcohol and drug use in different places and with different companions is examined, and the places where and companions with whom users of alcohol or drugs most frequently consume these substances are identified. Analyses are presented for the Services and pay grades. Before discussing specific findings regarding the context of alcohol and drug use, the construction of the measures of context is discussed.

A. Definitions of Context

Military personnel were asked to describe the context of their alcohol and drug use in two ways. First, they were asked the frequency (varying from never to almost every day) with which they drank any alcoholic beverages and used drugs for nonmedical purposes in each of the following places:

- . own quarters or place of residence (including ships);
- . enlisted, NCO, or officers' clubs;
- . on-base quarters of friends;
- . off-base homes or residences of friends;
- . civilian bars, taverns, nightclubs, or lounges;
- . driving around or sitting in a car;
- . out in the open, like at a sports event or picnic.

Second, they were asked the frequency (varying from never to almost every day) with which they drank alcohol and used drugs for nonmedical purposes with each of the following types of companions (regardless of whether the companions were also drinking or using drugs):

- . with mate or date;
- . alone when no one else is around;
- . with close friends, military only;
- . with close friends, including civilians;
- . with co-workers;
- . with only acquaintances or strangers.

- The occurrence of serious consequences of drug use for E1-E5's is positively related to the number of drugs used. The percentage who experience one or more consequences increases as the number of drugs used increases.
- Increases in the frequency of use of marijuana by E1-E5's during the past 30 days is accompanied by increasing numbers who experience serious consequences.

b. Drug Dependence

- The prevalence of drug dependence among E1-E5 personnel is 2 percent overall. The Army, Navy, and Marine Corps report 2 percent dependence and the Air Force reports 1 percent. Drug dependence was defined as the occurrence of any of the following: use of heroin, other opiates, barbiturates or other sedatives 5 or more times/week; detoxified because of drug use; experienced withdrawal type symptoms (nausea, stomach cramps) after stopping use of drugs.
- Drug dependence among E1-E5 personnel is positively related to the number of serious consequences. The percentage who experience serious consequences increases as the number of drugs used increases.

c. Alcohol Problems

- Alcohol use problem categories indicate that 78 percent of all personnel are not affected by alcohol use (i.e., they do not experience adverse consequences or become dependent from drinking). Nearly all officers (95-96) percent fit this category.
- Problems resulting from alcohol use (i.e., either adverse effects and not dependent, or dependent) occur more often among E1-E5's (28 percent) and E6-E9's (13 percent) than among officers (3-5 percent). Among Services, the Army (25 percent), Navy (27 percent) and Marine Corps (28 percent) personnel report more problems than Air Force (14 percent) personnel.
- Personnel classified as alcohol dependent experience more negative effects than those not affected or than those affected but not dependent. They show more negative effects in work and social relationships, drink more heavily, and are more involved in the use of drugs.
- Personnel with alcohol problems tend to be males, less educated, younger, single, of rank E1-E5, on active duty 4 years or less, stationed in the North Pacific or Europe, and at the present duty station 3 years or less.

2. Drug Use

Negative effects associated with drug use are apparent among the Services and are closely associated with the level of drug consumption.

a. Serious Consequences of Drug Use

- During the past 12 months, 10 percent of E1-E5 personnel experienced one or more serious consequences of drug use. Prevalence is higher among the Army (13 percent), the Navy (12 percent) and Marine Corps (11 percent) than among the Air Force (4 percent).
- The prevalence of serious consequences of drug use is higher for work impairment (8 percent) than for physical damage (2 percent), social disruption (3 percent) or other consequences (4 percent).
- Loss of productivity associated with drug use among E1-E5 personnel during the past year was 14 percent. High while working (12 percent) is the most frequently mentioned indicator of productivity loss.

a. Serious Consequences of Alcohol Use.

- During the past 12 months, 18 percent of all military personnel experienced one or more serious consequences of alcohol use. Prevalence is higher among the Marine Corps (23 percent), Navy (21 percent), and Army (19 percent) than among the Air Force (11 percent).
- There was little difference in the prevalence of incidents involving social disruption (11 percent), physical damage (10 percent), and work impairment (9 percent). "Other consequences" (7 percent) occurred least often.
- Loss of productivity associated with alcohol use during the past year was 34 percent for Total DoD.
- Lowered performance (30 percent) is the most frequently mentioned indicator of productivity loss.
- Among pay grades, productivity loss due to alcohol is highest among E1-E5's (40 percent) but is also reported by substantial segments of other pay grades (19 to 22 percent). Among Services, the loss is highest in the Navy (42 percent) and Marines (38 percent) and lowest in the Army (33 percent) and Air Force (28 percent).
- The occurrence of serious consequences is positively related to the average daily consumption of ethanol. The percentage who experience one or more consequences increases as average daily ethanol volume increases.

b. Alcohol Dependence

- The prevalence of alcohol dependence is 9 percent overall. Among pay grades it is highest for E1-E5 personnel (12 percent versus 1-4 percent for other pay grades). Among Services, the Army (11 percent), Navy (12 percent) and Marines (10 percent) report similar levels that exceed those among Air Force personnel (4 percent).
- Alcohol dependence is positively related to average daily consumption of alcohol. The percentage who are alcohol dependent increases as ethanol consumption increases. Nearly all dependence occurs at ethanol levels over 2.17 ounces or 5 drinks/day.
- Alcohol intoxication during the past 12 months occurred for 53 percent of DoD personnel. Among pay grades it occurred more often among E1-E5 personnel (60 percent) than for other pay grades (E6-E9, 37 percent; W1-W4, 29 percent; O1-O3, 40 percent; O4-O6, 31 percent). Among Services, Navy (60 percent) and Marines (58 percent) were higher than Army (51 percent) or Air Force (46 percent) personnel.

Table 6.20. Number of Different Serious Consequences by Drug Dependence for E1-E5's

Service/Number of Serious Consequences	Drug Dependence Status	
	Not Dependent	Dependent
Army		
No serious consequences	89.6	23.5
1 serious consequence	7.0	21.7
2 or more serious consequences	3.4	54.8
Total, any serious consequences	10.4	76.5
Navy		
No serious consequences	90.4	27.9
1 serious consequence	6.4	27.0
2 or more serious consequences	3.2	45.1
Total, any serious consequences	9.6	72.1
Marine Corps		
No serious consequences	90.5	26.8
1 serious consequence	5.6	21.1
2 or more serious consequences	3.9	52.1
Total, any serious consequences	9.5	73.2
Air Force		
No serious consequences	96.0	55.8
1 serious consequence	2.7	19.2
2 or more serious consequences	1.3	25.0
Total, any serious consequences	4.0	44.2
Total DoD		
No serious consequences	91.5	27.8
1 serious consequence	5.6	23.4
2 or more serious consequences	2.9	48.9
Total, any serious consequences	8.5	72.3

Note: For each Service, tabled values are column percentages and the first three rows total 100%, within rounding error. The "Total" row within each Service is the sum of the preceding two consequence rows (i.e., 1..., 2 or more...) for that Service.

Table 6.21. Indicators of Drug Abuse During the Past 12 Months for E1-E5's

Indicator of Abuse	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
1. Used more drugs than planned	8.6 (0.8)	8.3 (0.5)	7.4 (0.3)	3.5 (0.5)	7.1 (0.4)
2. Stayed "high" more than one day at a time	11.3 (1.1)	10.0 (1.0)	9.3 (0.5)	4.4 (0.3)	9.0 (0.5)
3. Got severely sick (nausea, vomiting, headache)	3.6 (0.3)	5.0 (0.5)	3.4 (0.7)	1.3 (0.2)	3.4 (0.2)
4. Skipped 3 or more meals while using drugs	8.3 (0.9)	8.0 (0.6)	7.2 (0.6)	2.9 (0.1)	6.8 (0.4)
Total with either of first two indicators	14.1 (1.1)	12.7 (0.8)	11.8 (0.4)	5.8 (0.4)	11.4 (0.5)
Total with any indicator	16.6 (1.2)	15.2 (0.9)	13.3 (0.4)	7.1 (0.4)	13.5 (0.5)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses.

Table 7.7. Place Alcohol Used Most Frequently During Past 12 Months by Alcohol Use Problem Categories

Service/Drinking Places	Alcohol Use Problem Category		
	Not Affected	Adverse Effects, Not Dependent	Dependent
Army			
Driving around or sitting in a car	5.9	9.1	16.1
Enlisted, NCO, or officers' club	23.1	15.9	10.9
Own quarters, including ships	43.5	51.5	50.7
Civilian bar, tavern, nightclub, lounge	8.5	14.2	14.3
On-base quarters of friends	1.7	2.4	1.8
Off-base homes of friends	2.4	3.1	2.2
Out in the open (e.g., sports event, picnic)	1.0	1.2	3.2
Navy			
Driving around or sitting in a car	7.9	16.6	17.8
Enlisted, NCO, or officers' club	22.2	19.2	19.8
Own quarters, including ships	34.9	28.1	26.1
Civilian bar, tavern, nightclub, lounge	15.7	23.0	25.9
On-base quarters of friends	1.1	1.6	0.8
Off-base homes of friends	4.5	7.4	5.5
Out in the open (e.g., sports event, picnic)	1.6	2.6	1.8
Marine Corps			
Driving around or sitting in a car	6.7	7.7	16.7
Enlisted, NCO, or officers' club	21.0	22.6	18.4
Own quarters, including ships	37.2	35.6	31.7
Civilian bar, tavern, nightclub, lounge	13.1	19.6	24.7
On-base quarters of friends	1.0	0.3	0.3
Off-base homes of friends	4.4	7.1	4.0
Out in the open (e.g., sports event, picnic)	1.0	2.0	2.6
Air Force			
Driving around or sitting in a car	3.0	7.8	5.6
Enlisted, NCO, or officers' club	24.9	23.1	14.8
Own quarters, including ships	51.2	56.0	56.5
Civilian bar, tavern, nightclub, lounge	5.9	6.7	11.7
On-base quarters of friends	0.8	1.2	2.8
Off-base homes of friends	1.8	1.6	2.8
Out in the open (e.g., sports event, picnic)	1.1	0.7	1.1
Total DoD			
Driving around or sitting in a car	5.5	11.0	15.5
Enlisted, NCO, or officers' club	23.2	19.1	15.3
Own quarters, including ships	43.2	43.4	40.9
Civilian bar, tavern, nightclub, lounge	9.9	16.0	19.1
On-base quarters of friends	1.2	1.7	1.4
Off-base homes of friends	2.9	4.6	3.6
Out in the open (e.g., sports event, picnic)	1.2	1.6	2.4

Note: Tabled values are percentages.

Table 7.8. Companions With Whom Alcohol Used Most Frequently During Past 12 Months
by Alcohol Use Problem Categories

Service/Companions While Drinking	Alcohol Use Problem Category		
	Not Affected	Adverse Effects, Not Dependent	Dependent
Army			
Alone, with no one else around	19.0	19.8	25.7
With mate or date	40.9	32.0	26.1
With close friends, military only	18.0	30.8	31.8
With close friends, including civilians	5.6	10.6	9.9
With co-workers	1.8	3.7	4.7
With only acquaintances or strangers	0.2	0.5	0.5
Navy			
Alone, with no one else around	16.5	15.9	19.4
With mate or date	41.8	37.4	27.5
With close friends, military only	17.5	29.3	30.6
With close friends, including civilians	11.0	13.5	15.9
With co-workers	1.8	2.3	3.8
With only acquaintances or strangers	0.5	0.1	1.0
Marine Corps			
Alone, with no one else around	13.8	15.3	15.1
With mate or date	40.3	31.1	16.7
With close friends, military only	22.4	38.4	48.3
With close friends, including civilians	6.0	6.1	11.2
With co-workers	2.3	2.9	4.1
With only acquaintances or strangers	0.3	1.0	3.1
Air Force			
Alone, with no one else around	17.0	24.3	29.6
With mate or date	50.8	36.8	26.5
With close friends, military only	13.2	23.8	26.0
With close friends, including civilians	5.3	7.8	9.5
With co-workers	2.1	3.7	2.6
With only acquaintances or strangers	0.1	0.5	1.0
Total DoD			
Alone, with no one else around	17.3	19.0	22.9
With mate or date	44.2	34.5	25.7
With close friends, military only	16.7	29.8	32.3
With close friends, including civilians	6.9	10.4	12.1
With co-workers	1.9	3.2	4.1
With only acquaintances or strangers	0.3	0.4	1.0

Note: Tabled values are percentages.

most likely the drinking companions of dependent personnel. Further, as the level of alcohol problems increased, the percentage of personnel drinking alone, with military friends, civilian friends, co-workers, and acquaintances or strangers increased, and the percentage drinking with mates or dates decreased.

In summary, most military personnel drink alcohol in private places and with mates or dates rather than in public places with friends or acquaintances. However, heavy drinkers and dependent drinkers were somewhat more likely to engage in drinking in public places with friends or acquaintances, or even alone.

C. Drug Use

The context of drug use is investigated by examining the frequency of drug use in different places and with different companions, the place where and type of companions present when drugs are used most frequently, and the places where and companions with whom those using different numbers of drugs engage in drug use. Most analyses are presented for the total DoD and the four Services; all percentages are for E1-E5 personnel only since they exhibit the most use. Because drug use is illegal behavior, it is expected that use will be primarily in private places and alone or with close friends or family.

Percentages for the frequency never, weekly or more often with which E1-E5 military personnel used drugs in different places during the past 12 months are presented in Table 7.9. For all DoD and Services, E1-E5's were most likely to have used drugs during the past year (the complement of "Never") in their own quarters, in off-base homes of friends, or in cars. Similar findings are seen for use weekly or more often, with drugs used most often in own quarters. Thus, drug use is most likely in private places.

Percentages for the frequency with which E1-E5 personnel used drugs with different companions during the past 12 months are presented in Table 7.10. E1-E5's across total DoD and the four Services are most likely to have ever or frequently used drugs with either military or civilian close friends. Use with mates or dates, alone, or with co-workers was somewhat less common, while few personnel engaged in use with acquaintances or strangers. Thus, drug use is a social occasion engaged in primarily with close friends.

Percentages of E1-E5's naming each place as the one where drugs were used most frequently during the past 12 months are presented in Table 7.11.

Table 7.9. Frequency of Drug Use by E1-E5's in Different Places During Past 12 Months

Places Where Drugs Are Used	Service/Frequency of Drug Use									
	Army		Navy		Marine Corps		Air Force		Total DoD	
	Never	Weekly or More Often	Never	Weekly or More Often	Never	Weekly or More Often	Never	Weekly or More Often	Never	Weekly or More Often
Driving around or sitting in a car	79.1	8.7	81.8	7.3	84.2	5.2	88.6	2.6	82.7	6.4
Enlisted, NCO, or officers' club	96.7	1.4	98.1	0.5	98.0	0.5	99.4	0.1	97.9	0.7
Own quarters, place of residence (including ships)	74.7	12.4	86.1	6.0	83.7	7.5	86.7	4.7	81.8	8.2
Civilian bar, tavern, nightclub, lounge	89.3	4.5	90.7	3.2	92.7	1.8	96.6	0.7	91.8	2.9
On-base quarters of friends	84.4	6.7	94.9	1.4	92.0	2.2	95.4	0.8	90.9	3.3
Off-base homes of friends	78.0	8.0	80.3	7.5	82.4	5.6	85.2	3.9	80.9	6.6
Out in the open (e.g., sports event, picnic)	83.0	5.2	85.8	4.2	85.8	3.4	92.1	1.0	86.3	3.7

Note: Tabled values are percentages.

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Table 7.10. Frequency of Drug Use by E1-E5's With Different Companions During Past 12 Months

Companions When Drugs Are Used	Service/Frequency of Drug Use									
	Army		Navy		Marine Corps		Air Force		Total DoD	
	Never	Weekly or More Often	Never	Weekly or More Often	Never	Weekly or More Often	Never	Weekly or More Often	Never	Weekly or More Often
Alone, with no one else around	78.6	8.5	83.7	4.9	83.9	4.5	88.8	3.2	83.1	5.7
With mate or date	77.9	8.0	82.4	6.4	85.5	4.8	87.9	3.5	82.4	6.1
With close friends, military only	71.5	13.6	82.5	6.9	78.5	8.6	86.9	4.0	79.2	8.8
With close friends, including civilians	73.2	11.5	76.5	8.8	77.9	8.0	84.8	4.3	77.5	8.6
With co-workers	76.6	11.3	84.5	6.0	83.5	7.1	89.7	2.3	82.8	7.1
With only acquaintances or strangers	91.2	1.7	91.5	1.1	92.3	1.0	96.1	0.2	92.6	1.1

Note: Tabled values are percentages.

Table 7.11. Place Drugs Used Most Frequently During Past 12 Months for E1-E5's

Place Drugs Used Most Frequently	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
Driving around or sitting in a car	12.8	12.2	9.1	7.1	10.9
Enlisted, NCO, or officers' club	0.5	0.1	0.4	0.1	0.3
Own quarters, including ships	14.2	6.9	9.4	8.4	10.2
Civilian bar, tavern, nightclub, lounge	1.3	1.5	0.7	0.4	1.1
On-base quarters of friends	1.5	0.4	0.7	0.6	0.9
Off-base homes of friends	3.6	4.2	4.6	3.1	3.7
Out in the open (e.g., sports event, picnic)	1.3	1.1	1.9	0.5	1.1

Note: Tabled values are percentages.

Table 7.12. Companions With Whom Drugs Used Most Frequently During Past 12 Months for E1-E5's

Companions With Whom Drugs Used Most Often	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
Alone, with no one else around	11.2	7.6	7.5	7.4	8.9
With mate or date	9.6	8.7	6.6	6.3	8.2
With close friends, military only	10.9	6.0	9.3	3.9	7.6
With close friends, including civilians	3.4	5.3	3.8	2.4	3.7
With co-workers	1.0	0.5	0.3	0.4	0.6
With only acquaintances or strangers	0.1	0.1	0.0	0.1	0.1

Note: Tabled values are percentages.

E1-E5 personnel in the total DoD and the four Services are most likely to name a car or their own quarters as the place where drugs are used most often. Off-base homes of friends were named by fewer E1-E5's as the place of most frequent drug use. Thus, military personnel most often used drugs in private places.

Percentages of E1-E5's naming each type of companion as the one with whom drugs were used most frequently during the past 12 months are presented in Table 7.12. For the total DoD and the four Services, drugs were used most frequently alone, with a mate or date, or with close military friends. Thus, drug use occurs most often with close associates.

Percentages of E1-E5's naming each place as the one where drugs were used most frequently during the past 12 months are presented in Table 7.13 by number of drugs used. For most quantities of drugs used, most personnel reported most frequent use in cars or their own quarters. There was no clear pattern of differences in place of most frequent use by the number of drugs used during the past year.

Percentages of E1-E5's naming each type of companion as the one with whom drugs were used most frequently during the past 12 months are presented in Table 7.14, again by level of drug use. For all quantities of drugs used, about equal proportions of E1-E5's report using drugs most frequently alone, with a mate or date, or with close military friends. Proportions naming a different place of most frequent use were similar among the drug use categories, and there were no clear differences between those using fewer or more drugs.

As noted above, drug use frequently occurs at an individual's own quarters or place of residence. It seems plausible that the location and type of housing may be related to the likelihood of drug use at one's quarters. Use at civilian quarters would be expected to be greater than use at military quarters due to a greater feeling of privacy and disassociation with military supervision. Table 7.15 provides data addressing the relationship of drug use and place of residence. Across all of DoD the pattern is in the expected direction, with the greater use among those in civilian housing (20 percent) followed by those in on-base military housing (17 percent) and off-base military housing (16 percent). Greatest use among those in civilian housing occurs for personnel in the Navy, Marine Corps, and the Air Force. In the Army the highest level of use occurs among those who reside in on-base military housing (26 percent), although personnel in other types of housing use at nearly the same rate (Table 7.15).

Table 7.13. Place Drugs Used Most Frequently During Past 12 Months by Number of Drugs Used Past Year for E1-E5's

Place Drugs Used Most Frequently	Number of Drugs Used Past Year				
	None	1	2	3	4
Driving around or sitting in a car	0.7	24.5	33.4	35.4	40.9
Enlisted, NCO, or officers' club	0.1	0.4	0.3	0.7	0.3
Own quarters, including ships	0.4	26.1	30.5	31.8	32.8
Civilian bar, tavern, nightclub, lounge	0.1	1.6	3.6	5.2	3.8
On-base quarters of friends	0.1	2.7	1.9	2.0	2.2
Off-base homes of friends	0.4	10.6	9.1	10.7	8.7
Out in the open (e.g., sports event, picnic)	0.1	3.2	3.2	2.0	2.0

Note: Tabled values are row percentages.

Table 7.14. Companions With Whom Drugs Used Most Frequently During Past 12 Months by Number of Drugs Used Past Year for E1-E5's

Companions With Whom Drugs Used Most Frequently	Number of Drugs Used Past Year				
	None	1	2	3	4
Alone, with no one else around	0.6	21.9	28.7	24.3	22.0
With mate or date	0.5	21.2	22.7	21.1	26.1
With close friends, military only	0.3	18.1	20.5	29.6	33.1
With close friends, including civilians	0.6	8.2	11.0	14.2	6.8
With co-workers	0.1	1.7	0.9	1.5	2.8
With only acquaintances or strangers	0.0	0.2	0.2	0.0	1.1

Note: Tabled values are row percentages.

Table 7.15. Drug Use at Own Quarters or Place of Residence for E1-E5's

Service/Current Type of Housing	Level of Use			Total in Housing
	Never	Less Than Weekly	Weekly or More Often	
<u>Army</u>				
Civilian housing	76.7	14.3	9.0	23.5
On base military housing	73.8	12.4	13.8	71.5
Off base military housing	78.3	12.9	8.8	5.0
Total	74.7	12.9	12.4	100.0
<u>Navy</u>				
Civilian housing	80.9	11.3	7.8	26.8
On base military housing	88.0	6.6	5.4	69.6
Off base military housing	86.3	9.3	4.4	3.6
Total	86.1	7.9	6.0	100.0
<u>Marine Corps</u>				
Civilian housing	77.7	12.8	9.5	29.1
On base military housing	86.2	7.1	6.7	68.8
Off base military housing	81.0	10.5	8.5	2.1
Total	83.6	8.9	7.5	100.0
<u>Air Force</u>				
Civilian housing	81.9	11.1	7.0	49.5
On base military housing	91.6	6.4	2.0	44.0
Off base military housing	90.1	5.4	4.5	6.5
Total	86.7	8.7	4.6	100.0
<u>Total DoD</u>				
Civilian housing	79.8	12.2	8.0	31.4
On base military housing	82.6	9.0	8.4	63.9
Off base military housing	84.2	9.5	6.3	4.7
Total	81.8	10.0	8.2	100.0

Note: Level of use entries are row percentages; total housing entries are column percentages.

In summary, most military personnel use drugs in private places and with close friends rather than in public places with only acquaintances. In this pattern, then, they approximate the contexts of alcohol use. The use of both drugs and alcohol is a social experience, but alcohol is more likely used in public places than are drugs. While heavy users of alcohol were somewhat more likely than others to drink in public places, alone, or with companions who were not close associates, a similar trend was not seen for heavy drug users. Patterns for the place and companions with whom drug use occurred differed little among multiple drug and single drug users.

D. Reasons for Alcohol Use and Drug Use

One aspect of the context of alcohol and drug use concerns individuals' perceptions of their reasons for using these substances. Several items in the questionnaire asked respondents to indicate the importance of reasons (Q44) or their agreement/disagreement with reasons (items in the Q50 and Q77 series) given for not drinking and using drugs. The interest here was to examine the relationship between agreement with these items and respondents' status as an alcohol problem individual or a drug user.

Table 7.16 arrays the reasons for alcohol use by alcohol use problem categories, and the reasons for drug use by the categorization of individuals as users or nonusers. Results are in line with expectations. Those who are affected or dependent on alcohol consistently report greater agreement with reasons supportive of using alcohol (friends drink, part of being in military, only recreation, drinking encouraged at parties, etc.) but less agreement with items not supportive of alcohol use (might interfere with work or health). Items about the cost of drinking, the effect of happy hours and religious beliefs showed reasonably small differences between the groups.

The second set of specific reasons for drinking showed a striking pattern. Individuals who were affected/dependent consistently showed higher percentages than did individuals who were not affected, indicating that the reasons were important to their drinking.

Comparable reasons were examined for using drugs in the bottom section of Table 7.16. Users showed greater agreement with three of the items (most of my friends use drugs, drugs cost too much, might use more if they were easier to get) than nonusers. Nonusers showed greater agreement with the remaining items. It is interesting to note, however, that even on some items

Table 7.16. Reasons for and for Not Drinking and Using Drugs

Item	Alcohol Problem Use Category	
	Not Affected	Affected/Dependent
<u>Drinking Reasons</u>		
Most of my friends drink	74.3	89.3
Part of being in military	31.4	48.1
Mate disapproves of my drinking	17.6	24.8
Only recreation available	11.1	26.1
Might interfere with my work	63.4	52.7
Encouraged to drink at parties	39.8	49.4
Costs too much	54.9	57.8
Number of "happy hours" makes drinking easy	26.3	24.9
Might interfere with my health	72.7	66.9
Against my religious beliefs	17.6	15.1
To be friendly or social	28.7	38.9
To forget my worries	11.9	33.7
To relax	36.1	64.7
To help cheer me up when I'm in a bad mood	12.6	37.3
To help me when I'm depressed	12.1	36.7
To help me when I'm bored	11.0	38.8
To increase my self-confidence	5.4	16.9
<u>Drug Use Reasons</u>		
	Drug Use Category	
	Nonuser	User
Most of my friends use drugs	15.1	63.7
Might mess up my mind	74.9	55.9
Mate disapproves of my using drugs	44.5	30.1
Might interfere with my work	76.8	59.3
Costs too much	39.1	64.6
Might interfere with my health	79.1	68.3
Against my religious beliefs	40.1	25.0
Might use (more) if easier to get	2.7	32.6

Note: Data are percentages of personnel in each alcohol/drug category who agreed or strongly agreed with the item or who indicated that it was a fairly important or very important reason.

which show good discrimination between users and nonusers, there is majority agreement with the items by users (e.g., drugs might mess up my mind, drugs might interfere with my work, and drugs might interfere with my health). Thus, even though the majority of users appear to agree about negative aspects of drug use, this awareness is not sufficient to deter them from such use.

Another aspect of the context of alcohol and drug use concerns levels of cigarette use. A description of the extent of cigarette use for Services and pay grades appears in Table 7.17. Overall E6-E9's report the greatest involvement with smoking, although E1-E5's and W1-W4's also report a majority of personnel as users of cigarettes. Use of two or more packs/day is also highest among E6-E9's and W1-W4's. This table is intended to indicate the extent of cigarette consumption in the Services. Another question of interest is the relationship of cigarette use to drug and alcohol use. This issue is not examined here, but data from the multivariate analyses in chapter 9 indicate that such a relationship exists. Individuals whose smoking level is high are more likely to consume high levels of ethanol and to use drugs than are individuals whose smoking level is low.

E. Context in Individual Installations

Although overall differences were found in the context of drinking and drug use, aggregate data can uncover some important relationships. More important, perhaps in terms of policy, are the contextual factors that might be changed at a base or installation to combat problems of alcohol and drug use. In order to look at some of these questions, we examined the information obtained in the Contextual Factors form and the Worldwide Survey in 14 Air Force and nine Marine installations.

We developed a number of indices for the Contextual Factors form that cover a variety of installation characteristics. The principle measures include: (1) number of Article 15's, overall and specifically related to alcohol and drug involvement, (2) driving while intoxicated on- and off-base, (3) number of urine tests conducted and the percentage positive for marijuana, and (4) the number of referrals for alcohol treatment.

A second set of measures was developed from the survey data. These measures included self reports of: (1) patterns of drinking at on-base clubs, (2) Article 15's, (3) DWI's, (4) attendance at alcohol classes, (5) ounces of alcohol consumed, and (6) marijuana use in the last 30 days. We must caution the reader that measures based on these results do not

Table 7.17. Levels of Cigarette Smoking in the Military

Service/Pay Grade	Smoking Levels			
	None	Up to 1 Pack/Day	1-2 Packs/Day	2 or More Packs/Day
<u>Army</u>				
E1-E5	43.8	22.3	24.9	9.0
E6-E9	37.5	15.7	29.9	16.9
W1-W4	44.4	8.6	32.0	15.0
O1-O3	71.5	14.8	10.9	2.8
O4-O6	66.9	13.1	12.5	7.5
<u>Navy</u>				
E1-E5	43.6	21.7	26.9	7.8
E6-E9	35.6	14.9	29.6	19.9
W1-W4	40.0	1.5	23.1	35.4
O1-O3	71.9	10.7	12.1	5.3
O4-O6	72.4	15.8	9.4	2.4
<u>Marine Corps</u>				
E1-E5	50.2	18.9	24.6	6.3
E6-E9	43.2	13.2	31.1	12.5
W1-W4	+	+	+	+
O1-O3	76.0	9.5	14.0	0.5
O4-O6	73.8	2.0	11.9	12.3
<u>Air Force</u>				
E1-E5	51.9	16.2	25.3	6.6
E6-E9	45.5	10.3	28.8	15.4
W1-W4	*	*	*	*
O1-O3	79.3	8.4	10.2	2.1
O4-O6	73.9	7.9	11.5	6.7
<u>Total DoD</u>				
E1-E5	46.4	20.3	25.5	7.8
E6-E9	39.7	13.7	29.6	17.0
W1-W4	43.9	7.8	32.1	16.2
O1-O3	75.2	11.0	11.0	2.8
O4-O6	72.0	10.3	11.4	6.3

Note: Data are row percentages.

* Not applicable.

+ Fewer than 20 respondents.

represent a particular installation. The sample was not designed to produce installation unit estimates. Therefore, at best we might be able to use the data to categorize installations as low, medium, or high on some measures.

In the preliminary analysis of both the official installation level reports and the survey data, we found substantial variation among the installations. For example, among the Air Force installations the rate of Article 15's varied from 6.2 to 1.1 percent of the total military personnel on the installation. The percentage of alcohol related Article 15's of the total issued varied from 42 to 12 percent. Urinalysis was also used to varying degrees, and the percentage of urine found to be positive for marijuana varied from 0.0 to 7.3 percent. We also found that marijuana use reported in the survey varied from 15 percent to 3 percent in the past 30 days. There was, however, no clear relationship between the installations with high self-reports of marijuana use and high percentages of positive urines.

Few systematic relationships among the measures were found in the preliminary analyses. The variations described in this section indicate that important differences exist among installations. The relationship among the measures, however, may be rather complex. We intend to explore these findings in more detail, considering other factors including the demographic and Service characteristics of the personnel at each installation. Our data base for this analysis is limited to Air Force and Marine installations. A larger data set including Army and Navy installations could contribute important additional data for these analyses. The data on the Contextual Factors form were generally easy to obtain from existing records that are maintained at the installations. We think that the effort involved obtaining additional data on this form for the other installations in the 1982 sample would provide valuable context information for policy development.

F. Summary of the Context of Alcohol and Drug Use

Military personnel tend to use both alcohol and drugs in private places and with close associates, although heavy alcohol use is somewhat more likely than other alcohol use to occur in public places and with acquaintances. Thus, heavy users of alcohol are more likely to incur a risk of alcohol-related problems. This summary highlights some of the more specific findings.

1. Alcohol Use

Most military personnel drink alcohol in private places and with mates or dates rather than in public places with friends or acquaintances. However, heavy drinkers and dependent drinkers were somewhat more likely to drink in public places, alone, or with acquaintances.

- . Military personnel were most likely to have drunk alcohol in their own quarters during the past year.
- . Military personnel were most likely to have drunk alcohol with a mate or date, with close military or civilian friends, or co-workers during the past year.
- . Military personnel drank alcohol most frequently in their own quarters and with their mate or date.
- . Heavy drinkers were most likely to drink in their own quarters but more likely than others to drink in cars or bars; they were most likely to drink with military friends and more likely than others to drink alone, with civilian friends, co-workers, and acquaintances or strangers.
- . Dependent and problem drinkers were most likely to drink in their own quarters but more likely than others to drink in cars and bars.
- . Dependent and problem drinkers were most likely to drink with their mates or dates but more likely than others to drink alone, with military friends, civilian friends, co-workers, and acquaintances or strangers.
- . Dependent and problem drinkers were more likely to rate reasons for drinking as important than were nonaffected drinkers.

2. Drug Use

Most military personnel use drugs in private places and with close associates rather than in public places and with acquaintances. However, multiple drug users are no more likely to use drugs in different settings than are single drug users.

- . Military personnel were most likely to have used drugs in their own quarters and with military or civilian close friends.
- . Military personnel used drugs most frequently in a car or their own quarters and alone, with a mate or date, or close military friends.
- . Single and multiple drug users used drugs most frequently in cars and their own quarters.
- . Single and multiple drug users used drugs most frequently alone, with a mate or date, or with close military friends.

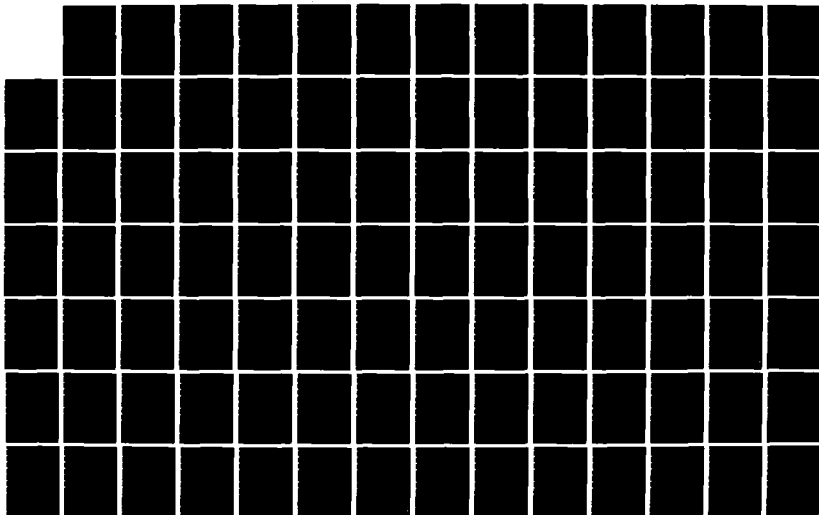
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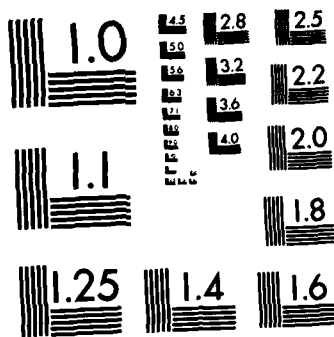
WORLDWIDE SURVEY OF ALCOHOL AND NONMEDICAL DRUG USE
AMONG MILITARY PERSONNEL: 1982(U) RESEARCH TRIANGLE
INST RESEARCH TRIANGLE PARK NC R M BRAY ET AL. 1983
MDA903-83-C-0120 F/G 6/5

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- . Analysis of own-quarters drug use indicated a tendency for those living in civilian housing to use drugs at home more often than those living in military quarters. This pattern was clear for the Navy, Marine Corps and Air Force but not for the Army.
- . Users and nonusers of drugs were able to be discriminated on the basis of their agreement with reasons for using drugs.
- . The majority of drug users agree that drugs might have negative effects on their work and health. That awareness, however, is not sufficient to deter them from drug use.

8. SELECTED COMPARISONS WITH MILITARY AND CIVILIAN POPULATIONS

Assessing the extent of drug and alcohol use in the military requires not only the analysis of current survey data but also comparison with levels of use found in other studies of both military and civilian populations. Because the military consists predominantly of young males, a population at high risk for using drugs and alcohol, use of these substances must be placed in context. Further, change in the patterns and levels of use over time must be examined to assess whether current use represents an increase or decrease in use of specific types of drugs and alcohol and whether levels of use have changed within branches of the service, regions of the world, and military pay grades.

This chapter makes selected comparisons of the present survey to two other surveys. The first is the 1980 Worldwide Survey (Burt and Biegel, 1980) on which this study is based. The second is the national civilian household survey conducted by the National Institute on Drug Abuse (NIDA) in 1982.

A. Selected Comparisons with the 1980 Worldwide Survey

1. General Issues

Analyses presented in this section compare the extent of frequent use of alcohol, mean daily consumption of ethanol, alcohol dependence, alcohol-related work impairment, use of marijuana and any drugs for nonmedical purposes, drug dependence, and drug-related work impairment indicated in the 1980 and 1982 Worldwide surveys. Although estimates of each of these indicators of drug and alcohol use are available for both years, numerous methodological differences between the surveys suggest that caution must be exercised in drawing inferences between the two studies. Differences in the survey instrument, the sampling methodology and the field procedures are considered briefly.

The 1980 questionnaire served as the basis for the 1982 instrument. Refinements and improvements were made to the questionnaire that included standardization of item responses, rewording and clarification of items, reordering of items and the addition of new items. The impact of these changes is unknown but is expected to be minimal given that key items remained unchanged. Nonetheless some caution is in order in generalization.

The sampling designs of the two surveys varied in several ways. There were differences in the sampling frame construction and stratification, sample allocation, randomization procedures, and estimation procedures. For example, the 1982 sample included all active duty military personnel of rank 06 or below, whereas the 1980 sample excluded personnel in recruit or basic training, at sea, or deployed away from the installation, or on leave or absent at the time the questionnaire was administered. The inclusion of trainees in the 1982 sample is important from the standpoint of accurately representing prevalence of use for the population of interest. However, it may have the effect of reducing 1982 prevalence estimates compared to 1980 estimates since trainees are expected to show little if any use due to their rigorous training regimen.

Another sampling difference occurred in the definition of World regions. The 1980 survey used four regions for comparison: CONUS, Europe, Pacific, and Other Locations, whereas the 1982 survey used four somewhat different regions for comparison: the Americas, North Pacific, Other Pacific, and Europe. Even though regional estimates were not comparable, Service level estimates and Worldwide estimates were comparable.

Field procedures also varied between the studies. One major difference was the method for selecting the sample personnel at the participating installations. In the 1980 survey, military liaison officers (MLO) had this responsibility based on procedures they were given; in 1982 more rigorous standardization was possible through the use of a centralized computer selection procedure. Another field difference was the use of a phase II data collection in 1982 to obtain questionnaire responses from the sizeable number of individuals who did not take part when the field teams were present. Only phase I data collection took place in 1980.

Clearly there were a number of differences between the 1980 and 1982 Worldwide Surveys. Nonetheless, despite differences, they are not so serious as to preclude any comparisons from being made. First, the large numbers of personnel surveyed in 1980 and 1982 offer a measure of robustness to the estimates. Second, there were many similarities in the questionnaire (key items stayed constant), sample design (e.g., two-person field teams gathered data), and procedures (e.g., random procedures were used). Together the similarities suggest that tentative conclusions about levels of use in 1980 and 1982 can be drawn. However, much less can be stated about the reasons

for the observed changes because of the possible influence of a broad range of factors such as shifts in drug enforcement policies, availability, or changes in the level of commitment to use.

2. Statistical Approach to Comparisons

In examining changes in the prevalence of use of drugs and alcohol between 1980 and 1982, the comparisons of interest are differences of the type,

$$\hat{P}_1 - \hat{P}_2,$$

where

$\hat{P}_1$ = the estimated proportion of the 1982 active duty military population, or some domain of interest defined within the population, that possesses a specified characteristic of interest, and,

$\hat{P}_2$ = the 1980 estimate of the same proportion.

Thus, any increase between 1980 and 1982 will be shown by a positive difference and a decrease by a negative difference.

The sample estimates from the 1980 and 1982 surveys are to be used to draw conclusions about the likelihood of differences between the corresponding population proportions. Interest lies in assessing whether the (null) hypothesis,

$$P_1 - P_2 = 0$$

is reasonably accepted or rejected given (estimates of) the variability associated with the estimated difference,

$$\hat{\Delta} = \hat{P}_1 - \hat{P}_2.$$

A commonly used test statistic for this purpose is Student's t , defined by,

$$t = \frac{\hat{\Delta}}{[\text{Var}\{\hat{\Delta}\}]^{1/2}},$$

where,

$[\text{Var}\{\hat{\Delta}\}]^{1/2}$ = the standard error (i.e. the square root of the estimated sampling variance) of the difference.

Some problems arise in using Student's t when the difference and variance estimators are derived from survey samples having complex error structures.

Specifically, the mathematical distributions of the numerator and denominator quantities are unlikely to satisfy the requirements and, indeed, the degrees of freedom associated with the test statistic are poorly determined.¹ On the other hand, it is known that Students' t is robust under departures from the distributional requirements, if these are not severe,² thereby providing an argument for its use.

Since the 1980 and 1982 surveys are independent, the (estimated) variance of the (estimated) difference is,

$$\hat{\text{Var}}\{\hat{\Delta}\} = \hat{\text{Var}}\{\hat{P}_1\} - \hat{\text{Var}}\{\hat{P}_2\} .$$

Information for estimating the sampling variances of the 1980 statistics, however, is not available. To provide some basis for making comparisons, the approximation described below has been used.

The total design effect is defined as the ratio between the actual sampling variance and the quantity,

$$\hat{\text{Var}}_{\text{srs}}\{\hat{P}\} = \frac{\hat{P}[1-\hat{P}]}{n} ,$$

where,

n = the total number of observations upon which the estimate, P , is based.

Estimates of the total design effect can be computed for each of the 1982 statistics. If it were the case that the 1980 design was similar to the 1982 design, the design effects for the two surveys would be expected to be similar. Given similar design effects, the variance of the 1980 statistics can be approximated by,

$$\hat{\text{Var}}\{\hat{P}_2\} = \frac{\hat{P}_2[1-\hat{P}_2]}{n_2} d_1 ,$$

where,

$$\hat{d}_1 = \frac{\hat{\text{Var}}\{\hat{P}_1\}}{\hat{P}_1[1-\hat{P}_1]/n_1} .$$

¹For the 1982 survey, the degrees of freedom for error is set at 43.

²Assessing the severity of the departures is beyond the resources available to the project.

In the above, n_1 and n_2 are the total number of observations upon which the estimates, $\hat{P}_1$ and $\hat{P}_2$, respectively, are based. Some difficulty is encountered in obtaining n -values which are exactly comparable, for example, because of some difference in the definitions of regions in 1980 and 1982. The n_2 -values used were taken from Burt and Biegel (1980: Table D-1).

Using the results of the calculations described above, the quasi-t statistics,

$$t_q = \frac{\hat{P}_1 - \hat{P}_2}{\left[\text{Var}\{\hat{P}_1\} + \frac{\hat{P}_2[1-\hat{P}_2]}{n_2} \hat{d}_1 \right]^{1/2}}$$

were computed for each of the comparisons generated. The resulting quasi-t statistics are shown in the following tables. Values of,

$$|t_q| \geq 2.0$$

are judged to indicate statistical significance.

Also shown in the tables are the values used to compute the quasi-t statistics, taken from the 1980 report and other tabular data in this report. The 1982 variances used in calculating the quasi-t statistics were obtained by squaring the standard errors shown in parentheses in the tables. Note that rounding errors associated with the estimates (particularly the standard errors) are likely to contribute numerical inaccuracies in the quasi-t statistic calculations. Although only comparisons of selected data are presented, the formula also may be used to make other comparisons between the 1980 and 1982 data.

3. Alcohol Use Comparisons

Comparisons of 1980 and 1982 estimates of the quantity and frequency of alcohol consumption and associated consequences are presented in Tables 8.1-8.5. More specifically, the comparisons involve estimates of the:

- . quantity of beer consumed on a typical drinking day,
- . frequency of heavy episodic drinking, that is, drinking 8 or more beers in a typical day,
- . average daily consumption of ethanol,
- . alcohol-related events, dependence, and consequences, and
- . alcohol-related work impairment.

General comparisons of all DoD personnel show that while the average quantity of beer consumed on a typical drinking session has increased, heavy episodic

drinking has not. However, changes in patterns of drinking appear to be associated with an increase in negative consequences such as work impairment.

Comparisons of 1980 and 1982 estimates of the quantity of beer consumed on a typical drinking day are presented in Table 8.1. For all DoD personnel, the percentage of those abstaining or drinking 1 drink on a typical day has significantly decreased; the percentage having 2-3 drinks showed no significant change, and the percentage having 4 or more drinks significantly increased. These same patterns of differences are generally observed for each of the Services, although not all the differences are significant. The decrease in abstaining and increase in having 4 or more drinks is significant for Army personnel; the decrease in having 1 drink or 8-11 drinks is significant for Navy personnel; and the decrease in abstaining and increase in having 12 or more drinks per typical drinking day is significant for Air Force personnel. There were no significant changes for the Marine Corps. Overall, the quantity of beer consumed on a typical day shows a significant increase over 1980. Measures of quantity alone, of course, are inadequate to understand alcohol use; measures of the frequency of consumption must also be compared.

Changes in the quantity and frequency of drinking between 1980 and 1982 are examined by comparing the frequency with which personnel engaged in heavy drinking of beer, that is, consumed 8 or more beers in a single day (see Table 8.2). For the total DoD, few changes in the quantity and frequency of consumption were observed. Only one comparison was significant: the percentage of all DoD personnel consuming 8 or more beers less than monthly increased. This increase was accounted for by Army personnel. The increase in heavy drinking less than monthly suggests more individuals may be engaging in weekend party drinking.

Changes in the quantity and frequency of alcohol consumption between 1980 and 1982 are examined by comparing the average daily consumption of ethanol during the past 12 months (Table 8.3). For the total DoD, the percentage engaging in moderate use of alcohol (.5-1.9 ounces a day) increased significantly, while the percentage engaging in heaviest use (5.0 ounces or more a day) decreased significantly in 1982. Changes in other quantities of use for the total DoD were not significant although there were several significant changes in use within branches of the service. Within the Army, the percentage abstaining decreased significantly while the percentage drinking

Table 8.1. Comparison of Quantity of Beer Consumed on a Typical Drinking Day for 1980 and 1982 Worldwide Surveys

Number of Drinks/Survey	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
None						
1980 Survey	28	22	21	30	26	
1982 Survey	20.5 (0.8)	25.7 (3.0)	19.7 (1.0)	24.0 (0.6)	22.8 (0.9)	
t _q	-5.44 ^a	0.83	-0.84	-6.19 ^a	-2.22 ^a	
1 Drink						
1980 Survey	12	11	9	14	12	
1982 Survey	11.1 (0.6)	7.0 (0.6)	8.7 (0.2)	14.4 (1.1)	10.5 (0.4)	
t _q	-0.91	-3.82 ^a		0.24	-2.32 ^a	
2-3 Drinks						
1980 Survey	31	30	31	33	32	
1982 Survey	32.1 (0.7)	26.0 (1.4)	28.3 (1.0)	35.0 (0.6)	30.9 (0.5)	
t _q	0.98	-1.81	-1.75	b	-1.40	
4-7 Drinks						
1980 Survey	20	25	28	17	21	
1982 Survey	23.2 (0.8)	24.9 (1.1)	27.7 (1.0)	20.2 (1.1)	23.2 (0.5)	
t _q	2.56 ^a	-0.06	-0.20	1.95	2.88 ^a	
8-11 Drinks						
1980 Survey	5	7	7	3	5	
1982 Survey	7.6 (0.7)	9.4 (0.8)	10.9 (0.2)	4.1 (0.5)	7.4 (0.4)	
t _q	2.58 ^a	2.10 ^a	b	1.54	4.25 ^a	
12 or More Drinks						
1980 Survey	3	5	4	1	3	
1982 Survey	5.5 (0.7)	7.0 (1.0)	6.7 (1.1)	2.2 (0.3)	5.1 (0.4)	
t _q	2.60 ^a	1.42	1.83	3.12 ^a	3.85 ^a	

Note: Tabled values for the surveys are percentages and represent prevalence estimates. Standard errors for the 1982 survey are shown in parentheses. 1980 data are taken from Burt and Biegel (1980), Table IV-25.

^ap < .05.

^bThe variance of the difference was not approximated closely enough to provide an acceptable value.

Table 8.2. Comparison of Frequency of Heavy Consumption of Beer in a Single Day for the 1980 and 1982 Worldwide Surveys

Frequency/Survey	Service					Total
	Army	Navy	Marine Corps	Air Force	Dod	
Never						
1980 Survey	45	37	32	55	45	
1982 Survey	41.5 (1.7)	33.9 (1.6)	35.6 (0.5)	55.1 (2.6)	42.7 (1.1)	
t_q	-1.27	-1.25	b	0.02	-1.33	
Less than Monthly						
1980 Survey	19	21	23	21	20	
1982 Survey	22.1 (0.8)	22.1 (0.7)	25.6 (0.5)	21.5 (1.3)	22.2 (0.5)	
t_q	2.49 ^a	1.03	b	0.25	2.88 ^a	
1-3 Days a Month						
1980 Survey	13	17	17	11	14	
1982 Survey	13.8 (0.8)	15.8 (0.6)	15.0 (0.2)	12.0 (0.9)	13.9 (0.4)	
t_q	0.63	1.28	b	0.73	-0.16	
1-2 Days a Week						
1980 Survey	10	11	12	7	10	
1982 Survey	9.7 (0.4)	12.8 (0.3)	11.5 (0.3)	6.4 (0.6)	9.8 (0.2)	
t_q	-0.46	b	b	-0.63	-0.64	
3-4 Days a Week						
1980 Survey	7	9	10	4	7	
1982 Survey	6.8 (0.7)	9.8 (0.8)	8.1 (0.7)	3.4 (0.3)	6.8 (0.3)	
t_q	-0.18	0.67	-1.69	-1.23	-0.42	
5-7 Days a Week						
1980 Survey	5	5	6	2	4	
1982 Survey	6.1 (0.6)	5.6 (0.6)	4.3 (0.2)	1.6 (0.2)	4.5 (0.3)	
t_q	1.20	0.67	b	-1.21	1.10	

Note: Tabled values for the surveys are percentages and represent prevalence estimates. Standard errors for the 1982 survey are shown in parentheses. 1980 data are taken from Burt and Biegel (1980), Table IV-48. Heavy consumption is defined as eight or more beers.

^a $p < .05$.

^b The variance of the difference was not approximated closely enough to provide an acceptable value.

Table 8.3 Comparison of Mean Daily Consumption of Ethanol During the Past 12 Months for 1980 and 1982 Worldwide Surveys

Ounces of Ethanol/Survey	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
None						
1980 Survey	15	10	10	15	13	13
1982 Survey	11.4	10.3	13.4	12.5	11.6	(0.5)
t _q	-4.15 ^a	0.14	1.14	-2.57 ^a	-1.74	
>0.0-0.4						
1980 Survey	35	34	31	44	37	37
1982 Survey	35.6	32.2	31.9	42.5	36.3	(0.7)
t _q	0.34	-1.06	0.37	-0.64	-0.64	
0.5-1.9						
1980 Survey	25	29	28	26	26	26
1982 Survey	28.9	30.0	30.9	30.2	29.7	(0.3)
t _q	4.15 ^a	0.82	9.69 ^a	5.57 ^a	8.09 ^a	
2.0-3.4						
1980 Survey	9	12	12	7	10	10
1982 Survey	10.2	12.2	11.8	8.2	10.3	(0.3)
t _q	1.54	0.22	-0.11	1.15	0.65	
3.5-4.9						
1980 Survey	6	5	7	4	5	5
1982 Survey	5.8	6.8	6.2	3.5	5.5	(0.3)
t _q	-0.41	1.81	-0.85	-0.78	1.10	
5.0 or More						
1980 Survey	10	10	12	4	9	9
1982 Survey	8.2	8.5	5.8	3.2	6.7	(0.4)
t _q	-1.32	-0.85	-2.35 ^a	-1.21	-3.39 ^a	

Note: Tabled values for the surveys are percentages and represent prevalence estimates. Standard errors for the 1982 survey are shown in parentheses. 1980 data are taken from Burt and Biegel (1980), Table IV-70.

^ap<.05

.5-1.9 ounces increased significantly. Within the Marine Corps, the percentage drinking .5-1.9 ounces a day increased significantly, while the percentage drinking 5.0 or more ounces a day decreased significantly. Within the Air Force, the percentage of abstainers decreased significantly, and the percentage drinking .5-1.9 ounces a day increased significantly. Thus, for most branches of the service and for the total DoD, the trend was for an increase in the proportion of moderate drinkers and a decrease in heaviest drinkers.

Associated with these changes in the quantity and frequency of drinking are a number of changes between 1980 and 1982 in alcohol-related events, dependence, and consequences (see Table 8.4). The construction of these indexes and their patterns among branches of the service, regions, and pay grades was described in Chapter 6. Four measures are examined: having become drunk without planning to, having been drunk more than a day at a time, alcohol dependence (having experienced blackouts, tremors, impaired control, or morning drinking), and having experienced one or more consequences of alcohol use (illness, arrest or incarceration, accidents, family problems, or treatment). In 1982, all DoD military personnel were significantly more likely to have become drunk without planning to, to have been drunk more than one day at a time, or to have experienced one or more consequences of their drinking than in 1980. There was no significant difference in the number indicating alcohol dependence.

Several item differences were significant for particular branches of the service. The increase in the percentage of total DoD personnel becoming drunk without planning to was evident for all branches of the service. The increase in the percentage of total DoD personnel having been drunk more than one day at a time or having experienced one or more consequences was accounted for by significant increases in those measures only among Army personnel. Finally, although no significant difference in alcohol dependence was seen between 1980 and 1982, a significant decrease was observed among Marine Corps personnel. Thus, in 1982 military personnel were significantly more likely to have become drunk or stayed drunk, and to have experienced one or more nonwork-related consequences of their drinking.

The percentage of total DoD personnel experiencing diminished work performance because of alcohol use during the past 12 months increased significantly between 1980 and 1982, from 27 percent to 34 percent (see Table 8.5).

Table 8.11. 1982 Prevalence of Nonmedical Alcohol and Drug Use in the Past 30 Days Among Military and Civilian Men Aged 18-25

Drug	Military		Civilians		t_q
Alcohol	85.6	(0.5)	75.7	(3.9)	2.52 ^a
Marijuana	25.1	(0.6)	34.7	(4.4)	-2.16 ^a
LSD/Hallucinogens	3.8	(0.3)	2.4	(1.0)	1.36
Cocaine	4.6	(0.3)	9.4	(1.9)	-2.48 ^a
Stimulants	6.9	(0.3)	4.9	(1.5)	1.30
Tranquilizers	1.7	(0.2)	1.7	(0.9)	0
Heroin	0.7	(0.1)	0.0 ^b	-	-

Note: Data are for male military personnel (n = 10,868) in the 1982 Worldwide survey and civilian males (n = 468) in the 1982 National Survey on Drug Abuse (Miller et al., 1983). Table values are percentages and represent prevalence estimates. Standard errors are shown in parentheses. Statistical significance is evaluated by a quasi t statistic, t_q .

^aSignificant at .05 level.

^bThere were no heroin users in the civilian sample; therefore, no standard error and corresponding t statistic were computed.

Standardized drug use rates for the civilian sample were calculated for alcohol, marijuana, hallucinogens, cocaine, stimulants, tranquilizers, and heroin. For each drug use measure, the estimated probability of civilian use was determined for each of the 8 cells (discussed above). These probabilities were then weighted by the estimated proportion of the 18-25 year old men that fell into each cell. The sum of the eight weighted drug use probabilities for a particular drug yielded the standardized drug use rate for that drug. Hence, the NIDA civilian data were standardized to the joint distribution on the standardizing variables, for the military sample. The NIDA sample was spread across the 8 cells approximately proportional to the estimated probability distribution of the Worldwide sample so that NIDA cell estimates of drug use based on small cell sizes had relatively little influence on the standardized rate. The standard error of the standardized drug use rates and the standard errors of the Worldwide survey rates were estimated assuming a design effect of 2. A quasi t-test was used to test the significance of the difference between the standardized rate for the civilian population and the unadjusted military rate.

3. Alcohol and Drug Use Comparisons

Prevalence data from the 1982 Worldwide survey and 1982 NIDA survey are compared in Table 8.11. Data were for males aged 18-25 in both surveys, the population most at risk for nonmedical drug use. In the two surveys, comparable data on use in the past 30 days were available for alcohol, marijuana, hallucinogens, cocaine, stimulants, tranquilizers, and heroin. As can be seen from the table, differences significant at the $p \leq .05$ level were found for the prevalence of alcohol, marijuana and cocaine use in the past 30 days.

Alcohol use in the past 30 days is significantly higher in the military population (85.6 percent) than in the comparable civilian population (75.7 percent). That more military personnel than civilians have had a drink in the past 30 days, of course, indicates very little. Data on where personnel drink, when they drink, how often they drink and how much they drink are of far greater significance in answering the questions addressed in this research study. Because the NIDA survey focused on drug use, the detailed data on the quantity and frequency of alcohol use needed to answer these questions were not collected.

(Miller et al., 1983) sponsored by NIDA. The comparisons were made in generally the same way as in the Burt and Biegel report with some important differences. First, the surveys were conducted in the same calendar year, reducing the problem of temporal differences. Second, because of the low proportion of females in the Services, only males are considered in the current comparisons. The inclusion of females in the standardization process could have resulted in small cell sizes for the military that would provide less stable estimates. Third, unlike the previous surveys, the questionnaire for the 1982 NIDA survey did not include barbiturates in the examples of sedative drugs presented to the respondents. The Worldwide survey combined barbiturates and sedatives into one question. Therefore, unlike the preceding surveys, comparable items on barbiturate and/or sedative use were not available. Finally, the statistical significance of the differences between the military and civilian surveys is estimated. These refinements should provide a more rigorous foundation for the comparison of the military and civilian surveys.

2. Statistical Approach to Comparisons

Prevalence of drug use was compared for a sample of 18-25 year old males ($n=10,868$) in the 1982 Worldwide survey and 18-25 year old males ($n=468$) in the 1982 NIDA general population survey. The civilian sample was standardized on the basis of the joint probability distribution of the military with respect to three demographic variables shown in previous analyses to be associated with drug use prevalence: age (18-21 versus 22-25), marital status (married versus single), and education (less than high school versus high school completion). These three 2-level variables were controlled to form 8 cells. Although shown to be more highly associated with drug use prevalence than demographic variables, personal background data (e.g., attitudes, problem behaviors) were not gathered in the NIDA survey. Hence, the standardized estimates for the civilian sample using demographic variables must be viewed with caution. The object of standardization is to control for important differences between samples that are related to the outcome in question.

Another important factor to be considered in interpreting the results is that the standardized rate is a weighted summation of cell drug use probabilities. The particular weights are a function of the population chosen for standardization purposes. Different standardization populations yield different sets of weights and, hence, different estimates.

Significantly lower percentages of military personnel, particularly E1-E5 personnel, are using marijuana/hashish or any drug for nonmedical purposes. Further, these decreases in the prevalence of use are accompanied by significant decreases in the number of drugs used except for having used 2 drugs. Significant decreases were also observed in the percentage of personnel experiencing most drug-related problems, including using more drugs than planned to, being high more than a day at a time, and experiencing drug dependence or work impairment; no significant difference was seen in the percentage experiencing one or more consequences. Thus, as would be expected, declines in drug use over the past two years have resulted in significantly fewer drug-related problems.

5. Summary of Comparisons with 1980 Survey

Analyses presented in this chapter have compared patterns of drinking and drug use and associated problems among military personnel in 1980 and 1982. The general trend is an increase in alcohol use and associated problems but a decrease in drug use and associated problems. More specifically, heavy drinking seems to be being replaced by more moderate drinking; there are, however, indications of increased alcohol dependence and more disruptions in work and social life. In contrast, drug use is declining as is the impairment of work and social life often associated with drug use.

The decrease in drug use accompanied by an increase in alcohol use suggests the possibility of a substitution phenomenon. Alcohol use may simply be taking the place of other drug use.

B. Comparisons with Civilian Populations

1. General Issues

A question concerning alcohol and nonmedical drug use in the military is the extent to which it mirrors usage in the civilian population. In the Burt and Biegel (1980) study, the comparison of the 1980 Worldwide survey and 1979 NIDA survey results indicated that few differences could be found between military and civilian use prevalence. Polich (1981) concluded that because the military largely recruits from a high risk civilian population (males, 18-25), the problems of alcohol abuse faced by the military were similar to those encountered in a comparable civilian population.

In order to determine if this is still the case, a comparison was made between the 1982 Worldwide survey and the 1982 National Survey on Drug Abuse

Table 8.10. Comparison of Diminished Work Performance Because of Drug Use During the Past 12 Months Among E1-E5s for 1980 and 1982 Worldwide Surveys

Type of Impairment/Survey	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
Lowered Performance					
1980 Survey	12	15	13	3	10
1982 Survey	8.3 (0.9)	7.9 (0.5)	5.9 (0.2)	3.1 (0.4)	6.7 (0.4)
t_q	-2.24 ^a	-7.75 ^a	-18.11 ^a	0.16	-4.65 ^a
Late for Work/ Left Work Early					
1980 Survey	8	8	8	2	6
1982 Survey	5.2 (0.5)	4.0 (0.5)	3.4 (0.5)	2.0 (0.2)	3.9 (0.2)
t_q	-2.97 ^a	-4.23 ^a	-4.53 ^a	0.00	5.83 ^a
Did Not Come to Work					
1980 Survey	6	4	5	1	4
1982 Survey	2.3 (0.3)	1.8 (0.5)	1.4 (0.4)	0.4 (0.1)	1.6 (0.2)
t_q	5.37 ^a	-2.22 ^a	-3.74 ^a	-2.79 ^a	-5.58 ^a
High While Working					
1980 Survey	21	26	25	8	19
1982 Survey	15.2 (1.4)	12.9 (0.9)	10.3 (0.5)	5.9 (0.3)	11.8 (0.6)
t_q	-2.32 ^a	-8.01 ^a	-15.02 ^a	-4.09 ^a	-6.71 ^a
Total With Any Diminution					
1980 Survey	22	28	28	9	21
1982 Survey	17.8 (1.5)	15.1 (0.8)	11.3 (0.6)	7.0 (0.4)	13.7 (0.6)
t_q	-1.62 ^a	-9.14 ^a	-14.27 ^a	-2.97 ^a	-6.92 ^a

Note: Tabled values for the surveys are percentages and represent prevalence estimates. Standard errors for the 1982 survey are shown in parentheses. The 1980 data are taken from Burt and Biegel (1980), Table III-93. Statistical significance is evaluated by the statistic, t_q .

^a $p < .05$

Table 8.9. Comparison of Drug Use Events, Drug Dependence, and Drug Use Consequences Among E1-E5's for 1980 and 1982 Worldwide Surveys

Item/Survey	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
Used More Drugs Than Planned						
1980 Survey	9	13	14	6	10	
1982 Survey	8.6 (0.8)	8.3 (0.5)	7.4 (0.3)	3.5 (0.5)	7.1 (0.4)	
t _q	-0.30	-5.43 ^a	-11.84 ^a	-2.70 ^a	-4.16 ^a	
High More than One Day at a Time						
1980 Survey	16	22	24	9	17	
1982 Survey	11.3 (1.1)	10.0 (1.0)	9.3 (0.5)	4.4 (0.3)	9.0 (0.5)	
t _q	-2.36 ^a	-6.36 ^a	-14.67 ^a	-7.83 ^a	-8.48 ^a	
Drug Dependence						
1980 Survey	5	4	5	1	4	
1982 Survey	2.2 (0.3)	2.1 (0.4)	1.5 (0.1)	0.5 (0.2)	1.6 (0.2)	
t _q	-4.28 ^a	-2.54 ^a	-14.95 ^a	-1.27	-5.58 ^a	
One or More Consequences of Drug Use						
1980 Survey	11	13	15	5	10	
1982 Survey	9.5 (1.0)	9.3 (1.4)	8.5 (0.3)	4.3 (0.6)	8.1 (0.6)	
t _q	-0.87	-1.58	-11.95 ^a	-0.71	-1.89	

Note: Tabled values for the surveys are percentages and represent prevalence estimates. Standard errors for the 1982 survey are shown in parentheses. The 1980 data are taken from Burt and Siegel (1980), Tables 11-4, 11-5, and 11-6.

^a p < .05

Comparisons of changes between 1980 and 1982 in the prevalence of drug-related events, drug dependence, and drug-related consequences among E1-E5 military personnel are presented in Table 8.9. The construction of these measures and their patterns of occurrence among branches of the service, regions, and pay grades were described in Chapter 6. Four measures are examined here: having used more drugs than planned to, having been high more than one day at a time, drug dependence (use of addictive drugs nearly every day, detoxified, illness after stopping use of addictive or nonaddictive drugs) and having experienced one or more consequences of drug use (illness, arrest or incarceration, accident, family problems). Between 1980 and 1982, significant decreases were observed among total DoD personnel in the percentage who had used more drugs than they had planned to, been high more than a day at a time, or experienced drug dependence; the percentage experiencing one or more drug-related consequences decreased but not significantly. Within branches of the service, decreases in the percentage using more drugs than planned were observed for all branches except the Army; decreases in the percentage being high more than a day at a time were observed for all branches; and decreases in drug dependence were observed for all Services except the Air Force. Finally, although no significant difference in the percentage experiencing one or more consequences was seen for the total DoD, a significant decrease was observed for Marine Corps personnel.

Changes between 1980 and 1982 in the prevalence of several indications of drug-related work impairment among E1-E5 military personnel during the past 12 months are shown in Table 8.10. The specific measures include lowered work performance, being late for work or leaving early, not coming to work, being high while working, or having experienced any drug-related work impairment. For total DoD personnel, the percentage indicating diminished work performance according to each of the indicators significantly decreased. Each of the changes was significant for each of the branches of the service with the exception of a lack of significance of difference in lowered performance or being late/leaving early among Air Force personnel and a lack of significance of difference in the percentage experiencing any work impairment among Army personnel. Thus, the percentage experiencing drug-related loss of work productivity significantly decreased for almost all comparisons.

These analyses of changes between 1980 and 1982 show significant decreases in both the prevalence of use of drugs and associated drug-related problems.

Table 8.8 Comparison of Number of Drugs Used During the Past 12 Months Among EI-E5s for the 1980 and 1982 Worldwide Surveys

Number of Drugs/ Survey	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
1 Drug						
1980 Survey	28	23	25	20	24	24
1982 Survey	23.3 (1.2)	17.1 (0.8)	19.1 (1.4)	16.1 (1.1)	19.3 (0.6)	19.3 (0.6)
t _q	-2.29 ^a	-4.51 ^a	-2.57 ^a	-2.15 ^a	-4.73 ^a	-4.73 ^a
2 Drugs						
1980 Survey	8	9	9	5	8	8
1982 Survey	8.2 (0.8)	7.7 (0.4)	7.6 (0.5)	4.5 (0.3)	7.1 (0.3)	7.1 (0.3)
t _q	0.15	-2.04 ^a	-1.73	-1.03	-1.84	-1.84
3 Drugs						
1980 Survey	5	7	6	3	5	5
1982 Survey	3.9 (0.3)	3.9 (0.7)	4.0 (0.6)	1.8 (0.3)	3.4 (0.3)	3.4 (0.3)
t _q	-2.06 ^a	-2.43 ^a	-1.91	-2.17 ^a	-3.00 ^a	-3.00 ^a
4 or More Drugs						
1980 Survey	11	19	20	5	13	13
1982 Survey	6.4 (0.8)	7.7 (0.9)	6.2 (0.2)	2.4 (0.2)	5.7 (0.4)	5.7 (0.4)
t _q	-2.96 ^a	-6.35 ^a	-31.37 ^a	-6.54 ^a	-8.98 ^a	-8.98 ^a
Total Any Drug Use						
1980 Survey	52	59	60	33	50	50
1982 Survey	41.7 (2.1)	36.3 (1.7)	36.8 (2.4)	24.7 (1.6)	35.5 (1.0)	35.5 (1.0)
t _q	-2.96 ^a	-8.61 ^a	-6.19 ^a	-3.14 ^a	-8.95 ^a	-8.95 ^a

Note: Tabled values for the surveys are percentages and represent prevalence estimates. Standard errors for the 1982 survey are shown in parentheses. The 1980 data are taken from Burt and Biegel (1980), Table III-87.

^a p < .05

Table 8.7. Comparison of Marijuana/Hashish Use During the Past 30 Days for 1980 and 1982 Worldwide Surveys

Pay Grade/Survey	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
E1-E5 1980 Survey 1982 Survey t _q	40 31.7 (2.1) -2.33 ^a	47 17.5 (2.8) -5.78 ^a	47 21.3 (1.2) -12.22 ^a	20 15.0 (1.1) -2.74 ^a	37 22.5 (1.2) -6.99 ^a	
E6-E9 1980 Survey 1982 Survey t _q	5 6.6 (0.5) 2.25 ^a	6 2.4 (0.6) -2.92 ^a	5 2.2 (2.0) -0.74	2 1.3 (0.5) -0.80	4 3.6 (0.3) -0.85	
W1-W4 1980 Survey 1982 Survey t _q	5 3.7 (1.6) -0.44	0 0.0 (**) *	+ + *	* * *	3 3.1 (1.3) 0.05	
O1-O3 1980 Survey 1982 Survey t _q	5 3.5 (1.2) -0.69	2 0.8 (0.8) -0.73	5 0.3 (0.3) -3.34 ^a	2 0.7 (0.3) -1.97	3 1.6 (0.5) -1.47	
O4-O6 1980 Survey 1982 Survey t _q	0 1.7 (1.2) 1.42	0 0.1 (0.1) 1.00	2 0.0 (**) *	1 0.0 (**) *	1 0.4 (0.3) -0.99	
Total 1980 Survey 1982 Survey t _q	28 23.9 (1.7) -1.45	32 13.4 (2.0) -4.94 ^a	36 17.1 (2.0) -5.34 ^a	14 9.6 (1.1) -2.33 ^a	26 16.5 (0.9) -6.09 ^a	

Note: Tabled values for the surveys are percentages and represent estimates. Standard errors for the 1982 survey are shown in parentheses. 1980 data are taken from Burt and Biegel (1980), Table III-1.

^a p < .05.

* Not applicable.

[†] Less than 20 respondents.

** Informative standard error not applicable.

percentage of all DoD personnel engaging in the nonmedical use of any drug decreased significantly from 27 percent to 19 percent, probably accounted for by the significant decrease in use among E1-E5 personnel from 38 to 26 percent. Some of the decrease may be attributable to the inclusion of trainees in the sample in 1982. Their highly structured and controlled environment would be expected to reflect lower drug use than that of other E1-E5 personnel. Significant decreases were also seen for Navy and Marine Corps personnel overall but not for Army and Air Force personnel in pay grades other than E1-E5. Within branches of the service, significant decreases were observed for E1-E5 Navy and Marine Corps personnel and E6-E9 Navy personnel; the one significant increase in use was observed among E6-E9 Army personnel.

Comparisons of changes between 1980 and 1982 in the prevalence of use of marijuana/hashish during the past 30 days are presented in Table 8.7. For all DoD personnel, the percentage of personnel engaging in use of marijuana/hashish decreased significantly from 26 percent to 16 percent, although much of this decrease seems to be accounted for by the significant decrease observed among E1-E5 personnel from 37 percent to 22 percent. These changes were similar to those observed for any nonmedical drug use. Significant decreases in use were also seen for all Services except the Army, where the decrease in use was not significant. Significant decreases were observed among E1-E5 personnel in all Services, among E6-E9 personnel in the Navy, and O1-O3 personnel in the Marine Corps. In the Army E6-E9 personnel showed a significant increase in use.

Comparisons of changes between 1980 and 1982 in the number of drugs used by E1-E5 military personnel during the past 12 months are presented in Table 8.8. For all DoD personnel, the percentage using the greatest number of drugs decreased significantly between 1980 and 1982; decreases were observed for use of 1 drug, 3 drugs, and 4 or more drugs while the use of 2 drugs remained stable. The decrease in the percentage using 1 drug or 4 or more drugs was observed for all branches of the service, and the decrease in the percentage using 3 drugs was observed for all branches except the Marine Corps. Among Navy personnel, a significant decrease in the percentage using 2 drugs was seen. Thus, the decreases between 1980 and 1982 in the prevalence of use of any drug or marijuana/hashish have been accompanied by decreases in the number of drugs used.

Table 8.6. Comparison of Any Nonmedical Drug Use During the Past 30 Days for 1980 and 1982 Worldwide Surveys

Pay Grade/Survey	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
E1-E5 1980 Survey	41	48	48	21	38
1982 Survey	34.3 (2.2)	20.9 (3.1)	25.3 (1.5)	18.1 (1.4)	25.6 (1.3)
t _q	-1.81	-5.02 ^a	-8.98 ^a	-1.28	-5.66 ^a
E6-E9 1980 Survey	6	6	5	2	5
1982 Survey	8.5 (0.8)	3.1 (0.7)	3.1 (1.0)	2.2 (0.4)	4.8 (0.4)
t _q	2.23 ^a	-2.21 ^a	-1.13	0.33	-0.32
W1-W4 1980 Survey	5	0	+	*	3
1982 Survey	4.1 (1.6)	0.0 (**)	+	*	3.5 (1.3)
t _q	-0.31	*	*	*	0.26
O1-O3 1980 Survey	5	3	5	2	4
1982 Survey	4.4 (1.1)	2.8 (1.1)	4.7 (1.9)	1.6 (0.4)	2.9 (0.5)
t _q	-0.32	-0.12	-0.10	-0.61	-1.28
O4-O6 1980 Survey	0	0	2	1	1
1982 Survey	2.0 (1.3)	0.1 (0.1)	0.0 (**)	0.7 (0.5)	0.8 (0.4)
t _q	1.54	1.00	*	-0.38	-0.31
Total 1980 Survey	29	33	37	14	27
1982 Survey	26.2 (1.8)	16.2 (2.2)	20.6 (2.0)	11.9 (1.5)	19.0 (1.0)
t _q	-0.95	-4.26 ^a	-4.84 ^a	-0.87	-4.75 ^a

Note: Tabled values for the surveys are percentages and represent prevalence estimates. Standard errors for the 1982 survey are shown in parentheses. 1980 data are taken from Burt and Biegel (1980), Table III-82.

^a p < .05.

* Not applicable.

[†] Less than 20 respondents.

** Informative standard error not available.

This increase was significant among personnel of all four of the Services and among E1-E5 and 04-06 personnel. Within branches of the service, several significant differences are noted. Within the Army, significant increases in the percentages of personnel experiencing work impairment were seen among E1-E5, W1-W4, and 04-06 personnel. Within the Navy, significant increases were seen only among 04-06 personnel and within the Air Force, among E1-E5 personnel and 01-03 personnel. Thus, alcohol use among military personnel had in 1982 resulted in significantly higher percentages of personnel experiencing work impairment because of their drinking, particularly among E1-E5 and 04-06 personnel.

These analyses show changes in the quantity and frequency of drinking and associated changes in alcohol-related problems between 1980 and 1982. Military personnel have increased the quantity of beer consumed on a typical drinking day but not the frequency of heavy beer drinking. One result of these changes in the quantity and frequency of drinking beer is that the percentage of personnel drinking moderate levels of ethanol has increased, but the percentage drinking heavy amounts has decreased. These changes in drinking were, in turn, associated with increases in occurrences of drunkenness, dependence, and negative consequences related to health, accident, legal issues, family, or work.

4. Drug Use Comparisons

Comparisons of the 1980 and 1982 nonmedical drug use as well as associated consequences are presented in Tables 8.6-8.10. More specifically, the comparisons involve estimates of the:

- . prevalence of any nonmedical drug use during the past 30 days by Service and pay grade,
- . prevalence of marijuana/hashish use during the past 30 days by Service and pay grade,
- . number of drugs used during the past 12 months among E1-E5 personnel,
- . drug-related events, dependence, and consequences among E1-E5 personnel, and
- . drug-related work impairment.

Comparisons of changes between 1980 and 1982 in the prevalence of any nonmedical drug use during the past 30 days are presented in Table 8.6. The

Table 8.5. Comparison of Diminished Work Performance Because of Alcohol Use During the Past 12 Months for 1980 and 1982 Worldwide Surveys

Pay Grade/Survey	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
E1-E5 1980 Survey 1982 Survey t _q	29 38.6 5.65 ^a	40 47.4 1.95	38 41.6 0.99	24 33.2 3.69 ^a	31 40.1 6.70 ^a
E6-E9 1980 Survey 1982 Survey t _q	16 20.3 1.66	25 25.3 0.24	25 20.8 -1.16	16 19.3 1.31	19 21.4 1.97
W1-W4 1980 Survey 1982 Survey t _q	4 16.6 2.91 ^a	12 19.3 0.48	+ + *	* * *	9 18.5 1.83
O1-O3 1980 Survey 1982 Survey t _q	15 19.9 0.88	29 27.7 -0.20	21 23.4 0.20	12 21.5 2.48 ^a	17 2.2 1.86
O4-O6 1980 Survey 1982 Survey t _q	7 19.3 3.53 ^a	14 23.3 2.04 ^a	15 31.8 1.58	15 16.9 0.74	12 19.3 3.71 ^a
Total 1980 Survey 1982 Survey t _q	24 33.1 7.48 ^a	35 41.7 2.47 ^a	34 37.6 2.00 ^a	20 28.0 3.24 ^a	27 34.4 7.04 ^a

Note: Data are percentages who report one or more occurrences due to alcohol of lowered work performance, coming late to work or leaving early, not coming to work, or being drunk or high at work. Tabled values represent prevalence estimates with standard errors in parentheses. The 1980 data are taken from Burt and Biegel (1980), Tables IV-87 - IV-92. Statistical significance is evaluated by the statistic, t_q.

^a p < .05

* Not applicable.

+ Less than 20 respondents

Table 8.4. Comparison of Alcohol Use Events, Dependence, and Alcohol Use Consequences Among E1-E5's for 1980 and 1982 Worldwide Surveys

Item/Survey	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
Became Drunk Without Planning To						
1980 Survey	16	25	23	18	20	
1982 Survey	35.9 (0.9)	44.8 (1.4)	40.9 (0.6)	33.4 (1.7)	38.0 (0.7)	
t _q	15.65 ^a	9.95 ^a	20.98 ^a	6.46 ^a	18.13 ^a	
Drunk More than One Day at a Time						
1980 Survey	10	16	16	6	11	
1982 Survey	16.1 (1.2)	17.8 (1.3)	18.5 (0.9)	8.3 (0.8)	14.6 (0.6)	
t _q	3.48 ^a	0.93	1.85	1.99	4.07 ^a	
Alcohol Dependence ^b						
1980 Survey	8	9	11	4	7	
1982 Survey	10.5 (0.8)	11.6 (1.0)	10.3 (1.8)	4.0 (0.7)	9.0 (0.5)	
t _q	2.05 ^a	1.81	-.25	0.00	2.71 ^a	
One or More Consequences of Alcohol Use						
1980 Survey	11	14	17	6	11	
1982 Survey	15.2 (1.1)	15.3 (1.5)	17.6 (1.8)	8.7 (1.1)	13.6 (0.6)	
t _q	2.52 ^a	0.58	0.22	1.72	2.90 ^a	

Note: Tabled values for the surveys are percentages and represent prevalence estimates. Standard errors for the 1982 survey are shown in parentheses. The 1980 data were taken from Burt and Biegel (1980), Tables II-12, II-13, II-14.

^a p < .05

^b The computation of alcohol dependence may have differed slightly between 1980 and 1982. The 1982 computation followed that of Polich and Orvis (1979) in using five items (see discussion of dependence measures in chapter 6). For the 1980 computation, Burt and Biegel (1980, p. 248) indicate that they followed the Polich and Orvis (1979) definition, but they only mention four items in their discussion of this measure. The item not referred to dealt with tremors (shakes). If omission occurred its effect would be a slight underestimate of dependence in 1980.

Marijuana use in the past 30 days in the military (25.1 percent) is significantly lower than the civilian population (34.7 percent). In 1980, Burt and Biegel showed that rates in military and civilian populations were similar. Though both rates have dropped since 1980, the reduction found for marijuana was much greater in the military than that found for the civilian population. This may reflect both the increased prevention effort in the military and more selective recruitment.

Cocaine use in the past 30 days is significantly lower in the military (4.6 percent) than in the civilian population (9.4 percent). The prevalences of the other types of drugs in the past 30 days are low, and there are no significant differences between the populations. Stimulant and hallucinogen use is somewhat higher in the military, but the differences are not significant. Burt and Biegel had found that in 1980 use of amphetamines or other stimulants in the past 30 days was twice as high in the military (10 percent) as in the civilian population (4 percent). Amphetamines or other stimulants may, then, be a more serious problem in the military than in the civilian population. The problem may in part be a function of the nature of duty. More careful attention should be given to the context and reasons for stimulant use.

The results of the comparisons reported in this section are similar to those found by Burt and Biegel (1980). The prevalence of use of alcohol and drugs in the military does not differ dramatically from that in the civilian population. There are, however, some indications that use of marijuana and cocaine are lower in the military than the apparently comparable civilian population. The military recruits come from a population where drug use is common. Without special preventive and intervention efforts, it is probably inevitable that drug use patterns in the military will, to an extent, mirror that of the civilian population. If the drug use in the military is to be controlled, the emphasis on prevention of new incidence of drug use should be supported and the efforts to deter the continuance of drug use habits should be maintained.

C. Summary of Comparisons with Military and Civilian Populations

Understanding the extent of drug and alcohol use in the military requires comparison of the current survey to other studies of military and civilian populations. Comparisons were made to the 1980 Worldwide Survey (Burt and Biegel, 1980) and to National Survey on Drug Abuse (Miller et al., 1983).

1. Selected Comparisons with the 1980 Worldwide Survey

Estimates of drug and alcohol use are available for both 1980 and 1982 Worldwide surveys. However, methodological differences between the surveys (in the questionnaires, the sampling methodology and the field procedures) suggest that caution must be exercised in drawing inferences between the two studies. Despite differences, they are not so serious as to preclude comparisons. The large numbers of personnel surveyed in 1980 and 1982 combined with the similarities of the questionnaire, sample design and procedures offer some measure of robustness to the estimates and suggest that tentative conclusions about levels of use in 1980 and 1982 can be drawn. However, much less can be stated about the reasons for any observed changes. They may be due to a broad range of factors such as shifts in drug enforcement policies, and availability, or changes in the level of commitment to use.

a. Alcohol Use

- Changes in alcohol use between 1980 and 1982 are apparent by comparing average daily ounces of ethanol consumed during the past 12 months.
- The percentage of total military personnel using .5-1.9 ounces a day increased significantly from 26 to 30 percent.
- The percentage of total military personnel using 5 or more ounces a day decreased significantly from 9 percent to 7 percent.
- For the Army and the Air Force, the percentage of abstainers decreased significantly (15 to 11 percent, 15 to 13 percent), and the percentage of personnel using .5 to 1.9 ounces increased significantly (25 to 29 percent, 26 to 30 percent). For the Marine Corps the percentage using .5 to 1.9 ounces increased significantly (28 to 31 percent), and the percentage using 5 or more ounces decreased significantly (12 to 6 percent). The Navy showed no significant differences for any of the levels of consumption.
- Overall the trend is for an increase in the proportion of more moderate drinkers and a decrease in heaviest drinkers.
- There were highly significant increases in 1982 of the percentage of personnel who reported becoming drunk without planning to during the past 12 months. The pattern held for Total DoD (20 to 38 percent) and for each of the Services.

- There was a significant increase in the percentages who reported staying drunk more than one day at a time (11 to 15 percent for Total DoD). The pattern was in the same direction for all of the Services although only the Army and the Air Force showed significant increases over 1980.
- There was an apparent significant increase from 7 percent to 9 percent in the occurrence of alcohol dependence. A possible item omission in the computation of dependence may have produced slight underestimates of the problem in 1980.
- The percentage experiencing serious consequences due to alcohol use increased significantly (11 to 14 percent for Total DoD). The pattern of more consequences was seen for all Services, but only the Army showed a significant increase (11 to 15 percent).
- Overall, military personnel in 1982 were significantly more likely to have become drunk, to have stayed drunk, or to have experienced one or more consequences of their drinking.
- There was a significant increase in the percentage of personnel who experienced diminished work performance because of alcohol use in 1982. The pattern was consistent for Total DoD (27 to 34 percent) and for each of the Services. Pay grades E1-E5's (31 to 40 percent) and 04-06's (12 to 19 percent) both showed significant increases over 1980.

b. Drug Use

- Overall drug use had declined significantly in 1982. For Total DoD, the percentage using any drug changed from 27 percent to 19 percent.
- The decline in drug use is primarily attributable to the decline in use among E1-E5 personnel (38 to 26 percent). Among this pay grade group, all Services showed a decreasing pattern of use, although only the Navy and Marine Corps achieved statistically significant reductions.
- Although the general pattern of drug use was lower in 1982 than in 1980, E6-E9's in the Army experienced a significant increase in 1982 from 6 percent to 9 percent.
- There was a significant decline in marijuana use during the past 30 days for all military personnel from 26 percent to 16 percent. Much of the decrease seems to be accounted for by the significant decrease in the use observed among E1-E5 personnel from 37 percent to 22 percent.

- In general, changes in marijuana use were similar to the changes observed for use of any drugs. Because marijuana is the drug used most frequently, it accounts to a large extent for the general pattern of overall drug use.
- Significant decreases in marijuana use were observed between 1980 and 1982 for the Navy, Marine Corps, and Air Force, but not the Army, although even here there was a trend toward a reduction.
- In the Army E6-E9's showed a significant increase in marijuana use from 5 to 7 percent.
- Comparison of 1980 and 1982 levels of use among E1-E5's for individual drugs showed an overall pattern of reductions for each drug. Significant decreases in use occurred for all the drugs except PCP and heroin.
- There was a significant decline in the percentage using more drugs than they had planned from 10 percent to 7 percent (Table 34).
- There was a corresponding reduction in the percentage of personnel reporting that they had been high more than one day at a time from 17 percent to 9 percent.
- There was a decline in the percentage indicating drug dependence from 4 percent to 2 percent.
- For Total DoD, there was no significant difference in the percentage who experienced one or more consequences due to drug use. A significant decrease was observed for the Marine Corps, however, from 15 percent to 9 percent.
- Reports of diminished work performance due to drug use decreased significantly for Total DoD from 21 to 14 percent. Each of the indicators of diminished performance showed a significant reduction at the Total DoD level, and each Service showed a corresponding significant reduction.

2. Comparisons with Civilian Population

Prevalence data from the 1982 Worldwide survey and 1982 NIDA survey of the general population were compared. Data were for males aged 18-25 in both surveys, the population most at risk for nonmedical drug use. The civilian sample was standardized on the basis of the joint probability distribution of the military with respect to age, marital status, and education. In the two surveys, comparable data on use in the past 30 days were available for alcohol, marijuana, hallucinogens, cocaine, stimulants, tranquilizers, and heroin.

- Prevalence of alcohol use in the past 30 days is significantly higher in the military population (85.6 percent) than in the comparable civilian population (75.7 percent). The civilian NIDA survey focused on drug use and the detailed data on the context, quantity, and frequency of alcohol use needed to address research questions in depth were not collected.
- Marijuana use in the past 30 days in the military (25.1 percent) is significantly lower than in the civilian population (34.7 percent). In 1980, Burt and Biegel showed that rates in military and civilian populations were similar. Though both rates have dropped since 1980, the reduction found for the military was much greater than that found for the civilian population.
- Cocaine use in the past 30 days is significantly lower in the military (4.6 percent) than in the civilian population (9.4 percent). The prevalence of the other types of drugs in the past 30 days is low, and there are no significant differences between the populations. These results are similar to those reported by Burt and Biegel (1980).

9. MULTIVARIATE ANALYSES OF ALCOHOL AND DRUG USE AND THEIR CONSEQUENCES

Analyses presented in prior chapters of this report have examined a variety of aspects of alcohol and drug use behavior and explored the effects of numerous variables associated with them. These analyses provide useful and important information about the effects of alcohol and drug use. However, they are limited by the fact that they have examined the effects of one or two variables (e.g., Service, region, pay grade) but have not controlled for effects of other relevant variables (e.g., demographic variables like age, education, marital status or attitudinal and behavioral variables).

The investigation of the effects on drug and alcohol use of several variables simultaneously is achieved most easily by the use of sophisticated multivariate statistical techniques. In this chapter the technique of multiple regression analysis is applied to this task.

We first begin with a description of the measures used in the analyses. This is followed by a brief discussion of regression analyses as an analytical tool. Next is a report of the results of regression analyses that examine four criterion (dependent) measures: Average daily ethanol consumption; the adverse consequences of alcohol use; drug use during the past 30 days; and the adverse consequences of drug use.

A. Definitions and Measures

The measures that were used in the regression analyses that follow can conveniently be classified into two groups: demographic variables and psychological/behavioral variables. Each of these is discussed in turn.

1. Demographic Variables

Eight demographic variables were used in the regression analyses. They were Service, race, sex, education, marital status, region, pay grade and age of respondent. For the analyses the coding of the independent variables determined the comparisons which were made. For Service, the coding provided comparisons of the Army, Navy, and Marine Corps to the Air Force. Race was coded to compare Hispanics to whites and others to whites. Education was split to include high school graduates or beyond to those with less than high school training or GED. Marital status was dichotomized to contrast single or married personnel whose spouse was not present to married personnel whose spouse was present: Region contrasted Americas, North Pacific and

Other Pacific with Europe. Pay grade compared E1-E5's with E6-E9's. Age retained its original coding of years.

2. Psychological/Behavioral Variables

Besides the demographic variables that were examined, a number of psychological/behavioral indicators were also studied to help understand relationships surrounding drug and alcohol use. Several indices were created for use in these analyses. Some of the indices were based on preliminary factor analyses among sets of items in the questionnaire that assessed attitudes, beliefs, norms, and behavior of participants. Other indices were based on general theoretical logic and face validity of groups of items. Eight indices are discussed: the Problem Behavior Index, the Drugs Impair Health/Work Index, the Drug Social Support Index, the Drug Treatment Climate Index, the Alcohol Social Support Index, the Alcohol Treatment Climate Index, the Reasons for Not Drinking Index, and the Drinking Motivation Index.

a. Problem Behavior Index. The Problem Behavior Index consisted of seven items that reported occurrences of negative events with no attribution being made for the cause of the event (i.e., these events were not attributed to drug or alcohol use). The items to which respondents reported counts of the number of times the event occurred during the past year, are noted below (with the question number in parentheses):

- I received UCMJ punishment (Court Martial, Article 15, Captain's Mast, Office Hours) (Q18D).
- I was arrested for a driving violation (Q18E).
- I was arrested for an incident not related to driving (Q18F).
- I spent time in jail, stockade, or brig (Q18G).
- I hit my mate or the person I date (Q18J).
- I hit my child(ren) for a reason other than discipline (spanking) (Q18K).
- I got into a fight where I hit someone other than my family (Q18L).

Each item was scored along a 6-point scale that ranged from no occurrences of the event to 7 or more occurrences of the event. The items were summed to form the Problem Behavior Index and occurrences of missing data were assigned

the value of zero. The theoretical range* of the index is from 7 to 42 with high scores indicating a high occurrence of problems.

b. Drugs Impair Health/Work Index. This index consisted of four items listed below which collectively dealt with beliefs about health or work impairment as a result of drug use.

- Using drugs might mess up my mind (Q77D).
- Using drugs might interfere with my work (Q77J).
- Using drugs might interfere with my health or physical fitness (Q77P).
- I might use (more) marijuana if it were easier to get (Q77V).

These items were arrayed along a 5-point Likert scale that ranged from strongly agree to strongly disagree. The index score consisted of a sum across the four items after appropriate reverse scoring of items to take into account positive or negative item phrasing. The theoretical range of scores was 4 to 20 for the index with a high score indicating acceptance or tolerance of drug use accompanied by the view that drug use will not impair one's health or work performance.

c. Drug Social Support Index. The four items below which deal with social support for drug use comprised this index:

- Most of my friends use drugs, at least marijuana (Q77C).
- Using drugs is just about the only recreation available at this installation (Q77I).
- At parties and social functions at this installation, it's easy to get away with using drugs (Q77L).
- There's always a party somewhere where drugs are being used (Q77N).

* The theoretical range indicates the range that could occur if there were no missing data. In practice missing data patterns lower the bottom boundary of the range due to the summation approach that was used to construct the index. That is, if one of five items had missing data, four items with one, then the index would have a value of four rather than expected value of five if all five items had been marked with a one. This did not create a situation for any of the indexes that distorted the data substantially since the item nonresponse patterns were generally low.

These items were scored along a 5-point Likert scale from strongly agree to strongly disagree. The index score was a sum of responses across items that had a theoretical range from 4 to 20. High scores indicated positive social support from peers and others for using drugs.

d. Drug Treatment Climate Index. This index consisted of six items that deal with respondents' beliefs about the climate that exists in the military to support persons seeking help or treatment with a drug problem.

- The personnel at this installation sincerely try to help people who have a drug problem (Q77A).
- Persons who try to get treatment for drug problems will later experience surprise searches of themselves, their auto, or their quarters (Q77E).
- Persons who want treatment for their drug problems have difficulty getting off duty to attend counseling sessions (Q77H).
- There is no way to get help for a drug problem without one's commander finding out (Q77K).
- Disciplinary action will be taken against any person identified as having a drug problem, even if no drugs are found (Q77Q).
- Seeking help for a drug problem will damage one's military career (Q77V).

Like items in the prior two indices, these items were scored along a 5-point scale from strongly agree to strongly disagree. Item scores were summed (after reversal for item phrasing) to yield an index with a theoretical range from 6 to 30. High scores indicate beliefs about a favorable climate to receive help for drug problems.

e. Alcohol Social Support Index. This index is analogous to the Drug Social Support Index and consists of five items that deal with social support for consuming alcohol.

- Most of my friends drink (Q50B).
- Drinking is part of being in the military (Q50C).
- Drinking is about the only recreation available at this installation (Q50H).
- At parties or social functions at this installation, everyone is encouraged to drink (Q50K).
- The number of "happy hours" at this installation makes drinking easy (Q50M).

The items were summed to form the index score which has a theoretical range of 5 to 25. High scores indicate positive social support for drinking alcoholic beverages.

f. Alcohol Treatment Client Index. The Alcohol Treatment Climate Index was constructed from the 6 items listed below which respondents answered using a 5-point scale anchored with strongly agree and strongly disagree response options.

- The personnel at this installation sincerely try to help people who have a drinking problem (Q50A).
- Persons who try to get treatment for alcohol problems will later experience surprise searches of themselves, their auto, or their quarters (Q50D).
- Persons who want treatment for alcohol problems have difficulty getting off duty to attend counseling sessions (Q50G).
- There is no way to get help for a drinking problem without one's commander finding out (Q50J).
- Disciplinary action will be taken against any person identified as having a drinking problem (Q50Ø).
- Seeking help for a drinking problem will damage one's military career (Q50S).

Index scores, which had a theoretical range from 6 to 30, were computed by summing items that were corrected for direction of phrasing. The index is parallel to the drug treatment climate index and indicates beliefs about the climate that exists in the Military toward getting help with an alcohol problem. High scores on the index indicate a favorable climate for receiving help with an alcohol problem.

g. Reasons for Not Drinking Index. This index was formed from the 5 items listed below, which used the Likert strongly agree to strongly disagree 5-point scale.

- My mate or the person I date disapproves of my drinking (Q50F).
- Drinking might interfere with my work (Q50I).
- Drinking costs too much (Q50L).

- Drinking might interfere with my health or physical fitness (Q50N).
- Use of alcohol is against my religious beliefs (Q50R).

The index was computed by summing item scores after they were corrected for direction of phrasing. Scores had a theoretical range from 5 to 25 with high scores indicating agreement with reasons for not using alcohol.

h. Drinking Motivation Index. The Drinking Motivation Index was patterned after a similar index used by Polich and Orvis (1979) and was comprised of five items that assessed reasons for drinking.

- To forget my worries (Q44B).
- To relax (Q44C).
- To help cheer me up when I am in a bad mood (Q44D).
- To help me when I am depressed or nervous (Q44E).
- To increase my self-confidence (Q44G).

Respondents indicated how important these reasons were to their drinking along a 4-point scale that ranged from not at all important (1) to very important (4). Item scores were averaged to yield the index score which retained the item range from 1 to 4. A high score on the index indicates high performance of the reasons to respondents drinking behavior and thus indicates a high motivation for drinking.

i. Other Variables. Besides the indices described above, several other psychological/behavioral variables were used in the regressions. These variables were reports of frequency of church attendance during the past year (Q.102); cigarette smoking level during the past 30 days (Q.103); average daily ounces of ethanol consumed during the past year; drug use pattern categories (no drug use versus marijuana use only), and other drug use versus marijuana only use; reports of needing a drink at work (Q50T); and reports of needing an upper at work (Q77B).

B. Analytical Approach of Regression Analysis

In multiple regression analysis a set of independent variables is examined to determine how well they can jointly account for or explain the variation that occurs in the criterion variable of interest. The size of the estimated regression parameters associated with each variable indicates the importance of that variable in predicting the criterion variable. Thus, for example,

regression analysis could be used to examine the question of how much drug use behavior can be explained by demographic characteristics of military personnel and which demographic variables are most important. The strength of a multiple regression analysis is that each variable in the model being tested is adjusted for the effects of all other variables that appear in the model. Thus, it is possible to determine how well the set of variables tested accounts for the variance of the criterion measure and, further, to identify which variables in the set are important in explaining the criterion behavior.

Several exploratory analyses were performed using multiple regression analysis for the 1982 Worldwide Survey. These analyses were limited to enlisted personnel (E1-E9) for both theoretical (e.g., officers and enlisted personnel have different motivations for being in the military) and practical reasons (e.g., the highest incidence of drug use and drinking problems occur among enlisted individuals).

Each regression analysis that was conducted used all of the demographic variables noted above and relevant subsets of the psychological/behavioral variables. For these analyses, a weighted least squares approach (i.e., each observation was weighted by its sampling weight) was followed in which all variables that were being examined in a particular model were included simultaneously in the model analyses. These analyses did not use a stepwise approach in which statistical criteria are used to select which variables enter the model and the order in which they enter a regression. However, since the demographic variables were listed in the model before the psychological variables, it is possible to examine the explanatory effects (indicated by R^2) of the demographic variables by themselves as well as that of the total set of variables. Further, by subtracting the R^2 of these two, the additional contribution of the psychological/behavioral variables to the total variance explained can be assessed.

The regression analyses that follow examine four criterion variables: The mean daily ounces of ethanol consumed during the past 12 months; the number of consequences experienced as a result of alcohol use; the use of drugs during the past 30 days; and the number of serious consequences experienced as a result of drug use.

C. Average Daily Ethanol Consumption

The goal of the present analysis was to identify the variables that explain alcohol consumption and to examine the joint effects of several variables in a regression model. The criterion variable for the regression was average daily ounces of ethanol. This analysis was based on the total sample of E1-E9's and consisted of 18,284 observations after cases with missing data were excluded. Seventeen regression parameters displayed in Table 9.1 were estimated and resulted in an R^2 for the full model of .238. The demographic variables themselves had an R^2 of only .057. From Table 9.1, it can be seen that only 4 of the 11 demographic regression parameters were significant. They were race, sex, marital status, and the regional contrast between the Americas and Europe. Hispanics, on the average, consumed about one fourth ounce more alcohol (.265) than whites; males consumed almost half an ounce (.456) more ethanol per day than females; single persons consumed about four-tenths of an ounce (.384) more ethanol per day than married persons; and personnel in Europe consumed about four-tenths of an ounce (.393) more ethanol than those in the Americas. It is important to recognize that these differences have been adjusted for all other variables in the model which is a desirable feature of regression analysis.

It is interesting to note that among the demographic variables there are no Service effects and only one regional effect. Earlier descriptive tables (e.g., Table 4.16) indicated that the Air Force had more moderate and light drinkers and fewer heavy drinkers than the other Services. The regression analysis indicates that when demographic and psychological/behavior variables are controlled, no significant differences remain among the Services in ethanol use. While adjusted regional differences in ethanol consumption do not completely disappear, only the Americas and Europe differ significantly. In general, the demographic variables, as a set, are not strong predictors of ethanol consumption.

When the psychological/behavioral variables are added to the model, the R^2 increases from .057 to .238, more than a four-fold increase of .181. All but one of the 9 psychological/behavioral variables are highly significant at the .001 level. All of these variables except drug use patterns originally had arbitrary units and were standardized to unit variance. Drug use patterns was left in its original metric since it is more interpretable. Problem behaviors and drinking motivation are important predictors of ethanol

Table 9.1. Summary of Regression Models for Enlisted Personnel

Independent Variables	Criterion Variables			
	Ethanol Consumption (N = 18,284)	Alcohol Use Consequences (N = 16,326)	Drug Use Past 30 Days (N = 18,304)	Drug Use Consequences (N = 5,205)
Demographic Variables				
Service				
Army versus Air Force	.032	-.015	.054**	.077
Navy versus Air Force	.144	-.019	-.033*	.094
Marines versus Air Force	.011	.058	.011	.083
Race				
Hispanic versus White	.265*	.129*	-.010	.169
Black versus White	.139	-.111*	-.014	.175
Other versus White	-.105	.010	-.031	.199
Sex (Female versus Male)	-.481**	-.067	.016	.001
Education (High School or beyond versus less than High School or GED)	-.025	-.073	-.036**	-.005
Marital Status (Single or married, spouse not present versus married, spouse present)	.391**	.039	.031**	-.012
Region				
Americas versus Europe	-.455**	-.003	.001	-.144
North Pacific versus Europe	-.261	.070	-.066**	-.008
Other Pacific versus Europe	-.251	-.024	.032	-.092
Pay Grade (E1-E5 versus E6-E9)	.115	.052	.037*	.268
Age (Years)	.004	.006	.004**	-.003
Psychological/Behavioral Variables				
Problem Behavior Index ^a	.420**	.456**	.029**	.239**
Drugs Impair Health/Work Index ^a	-	-	.103**	.081*
Drug Social Support Index ^a	-	-	.040**	.051
Drug Treatment Climate Index ^a	-	-	-.026**	.035
Need an Upper at Work	-	-	.023**	.128**
Drug Use Pattern				
Non Use vs. Marijuana only	-.421**	-.036	-	-
Other Use vs. Marijuana only	.737**	.276**	-	.277**
Alcohol Social Support Index ^a	.136**	.032	.012*	-
Alcohol Treatment Climate Index ^a	.020	-.041*	-.022**	-
Reasons for Not Drinking Index ^a	-.309**	.051**	-	-
Drinking Motivation Index ^a	.453**	.176**	.021**	-
Church Attendance ^a	-.103**	-.007	-.013**	.041
Smoking Level ^a	.267**	.075**	-	.110**
Need a Drink at Work ^a	.297**	.046*	-	-
Ethanol (ounces)	-	.081**	.019**	.052**
R ² for Complete Model	.238	.290	.273	.131
R ² for Demographic Variables Only	.057	.036	.089	.020
Addition to R ² of Psychological/Behavioral Variables	.181	.254	.184	.111

Note: Tabled values are regression parameters (beta values). Analyses used weighted data. Criterion variables for the four regressions were: Average daily ounces of ethanol consumed during the past 12 months; total number of serious consequences experienced as a result of alcohol use (analysis excluded alcohol abstainers); any drug use (yes, no) during the past 30 days; and total number of serious consequences experienced (based on drug users only).

Values of the regression parameters indicate the change in the criterion variable that is produced by each independent variable after that variable has been adjusted for all other variables appearing in the model. For example, males consume .481 more ounces of ethanol/day than females; males experience .067 more consequences than females from alcohol use; males are .016 more likely to use drugs in the past 30 days than females; and males experience virtually no more consequences (.001) than females from drug use.

^aStandardized to unit variance.

-Variable not included in regression model.

*p < .01

**p < .001

Table 10.1. Belief That Installation Personnel Sincerely Try to Help People Who Have a Drinking Problem

Region/Pay Grade	Service								Total DoD	
	Army		Navy		Marine Corps		Air Force			
Americas										
E1-E5	37.8	(3.7)	41.6	(1.7)	45.4	(3.3)	43.4	(2.2)	41.	(1.4)
E6-E9	50.8	(4.9)	58.0	(2.4)	67.4	(2.4)	50.6	(1.8)	54.1	(1.8)
O1-O3	48.2	(3.6)	59.1	(5.9)	71.1	(2.1)	35.1	(3.9)	45.9	(3.3)
O4-O6	47.8	(8.9)	75.1	(6.8)	+	(+)	54.7	(4.9)	56.9	(3.7)
Total	41.5	(3.7)	46.2	(1.7)	50.3	(3.2)	44.5	(2.1)	44.7	(1.4)
North Pacific										
E1-E5	44.8	(1.9)	52.8	(0.7)	52.6	(1.6)	36.9	(5.4)	45.8	(1.6)
E6-E9	53.6	(4.7)	61.2	(2.3)	50.9	(3.0)	47.3	(4.4)	52.5	(2.2)
O1-O3	56.5	(3.9)	64.7	(7.9)	65.0	(8.6)	39.2	(2.7)	54.8	(2.8)
O4-O6	63.4	(5.7)	64.9	(1.8)	+	(+)	58.3	(12.2)	62.1	(5.5)
Total	47.8	(1.8)	55.6	(1.5)	53.4	(1.1)	39.7	(4.5)	48.1	(1.4)
Other Pacific										
E1-E5	37.6	(5.0)	47.7	(1.3)	51.8	(1.7)	39.0	(1.7)	44.6	(0.9)
E6-E9	39.4	(7.3)	60.5	(3.7)	60.1	(6.1)	48.6	(3.4)	52.6	(3.0)
O1-O3	51.7	(13.3)	51.2	(4.4)	78.6	(7.7)	38.5	(1.8)	49.7	(3.0)
O4-O6	31.9	(4.3)	57.9	(5.2)	+	(+)	53.1	(9.1)	48.8	(6.8)
Total	38.8	(6.2)	51.3	(1.6)	54.4	(0.9)	42.1	(1.8)	46.9	(1.5)
Europe										
E1-E5	39.4	(1.2)	44.5	(3.6)	68.6	(0.9)	38.8	(3.3)	39.6	(1.2)
E6-E9	48.8	(1.9)	53.4	(7.5)	+	(+)	48.1	(5.8)	48.8	(2.1)
O1-O3	64.8	(4.7)	55.8	(10.4)	+	(+)	43.2	(2.8)	57.2	(3.4)
O4-O6	61.0	(8.8)	56.4	(15.2)	+	(+)	52.4	(8.6)	56.5	(6.3)
Total	42.5	(1.0)	48.7	(5.7)	63.7	(0.5)	41.7	(1.8)	42.7	(0.8)
Total Worldwide										
E1-E5	38.6	(2.3)	42.3	(1.5)	46.9	(2.8)	42.2	(1.8)	41.4	(1.1)
E6-E9	50.1	(3.2)	58.1	(2.1)	64.0	(2.1)	49.9	(1.7)	53.1	(1.4)
W1-W4	44.7	(4.1)	77.3	(11.2)	+	(+)	*	*	50.8	(4.5)
O1-O3	51.9	(3.1)	58.5	(5.0)	70.9	(1.9)	35.9	(3.5)	47.5	(2.8)
O4-O6	49.1	(6.8)	71.4	(5.3)	55.2	(3.3)	54.5	(4.3)	56.6	(3.1)
Total	42.0	(2.4)	46.9	(1.6)	51.1	(2.6)	43.8	(1.7)	44.6	(1.1)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

* Not applicable.

+ Less than 20 respondents.

from the worldwide questionnaire asking about treatment as the most appropriate indicators of attitudes. In general we discuss general impressions of the perception of treatment and prevention. Unlike the statistical tables on epidemiology, in these discussions, we rely less on statistical projections to the population and more on the interpretation of the general level and patterns of responses to provide fairly gross statements on attitudes. We also looked at the responses of the persons responsible for the drug and alcohol programs and data that were obtained from the sample of respondents at the sampled first stage unit installations.

1. Alcohol Problems

To give an accurate statistical picture of the perceptions, we looked at the proportions of servicemen who agreed with the statement that "The personnel at this installation sincerely try to help people who have a drinking problem." In Table 10.1 the data in this question are presented by service region and rank. Overall, just under half of the population (44.6 percent) feel that personnel sincerely try to help. In general this feeling is held by a somewhat higher proportion of Marines and a somewhat lower proportion of Army personnel. The most important result is that the perceptions of sincere attempts to help differ markedly by rank. Those with the rank E1-E5 are less positive in almost every category included in Table 10.1. While officers and noncommissioned officers generally feel there is a sincere attempt to help, this positive feeling is not shared to the same extent by the lower enlisted ranks. This suggests that alcohol and drug offices need to more strongly publicize their efforts. The data on awareness of programs, discussed later, also follow the same pattern. If more information is disseminated, a more general positive perception of programs can be generated which, in turn, could lead to greater support for utilization of the program.

Results for other attitudinal items revealed that about a third of the sample respondents agreed that searches will be initiated, disciplinary measures will be taken, or a career will be damaged if an alcohol problem is identified. Thus, a nonpunitive approach to alcohol problems is perceived by most of the respondents in the sample.

It may be useful to compare the perception of the service personnel with those of alcohol and drug program directors that were obtained from the Supplementary Forms. Of the 14 Air Force and 8 Marine program directors

- . detoxification programs, and
- . Alcoholics Anonymous groups.

We also asked about attendance at classes for general education and supervisor training.

2. Checklist for Prevention and Treatment Program

A number of approaches could have been adopted for assessing the nature, quality, and effectiveness of prevention and treatment programs at various installations. For example, in studies of employee assistance programs, extensive site visits have been conducted (e.g., Davenport, Hubbard, and Steele, 1978) that involve interviews with 6-10 key program people and descriptive data from published documents and record checks. These intensive investigations provide a comprehensive assessment of the programs.

Although this approach could have been employed in the Worldwide Survey, the objectives of the present study and the time and resource constraints limited extensive supplementary data collection. As a substitute for the comprehensive investigation of programs, a 6-8 page Alcohol and Drug Program Checklist instrument (see Appendix B) was designed to assess the general nature of prevention and treatment programs available at sampled installations. The checklist was sent to the individual in charge of alcohol and drug programs at each installation before the visit of field teams during phase 1 data collection. When needed, field team members met with the designated individual to review and clarify the information requested in the checklist.

These data were then summarized, coded, and selected variables were developed on data records at each installation. Comparisons can then be made between installations with different types of programs. Because of the exploratory and supplementary nature of this assessment, the use of this form was optional for each service. The Air Force and Marines chose to use the form. Data are available for 14 Air Force installations and 8 Marine installations.

B. Attitudes Toward Treatment and Prevention

The first set of variables we investigated concerned the attitudes and perceptions toward treatment and prevention efforts. We chose those items

perceptions of treatment and prevention efforts, personal experience with treatment, and knowledge of available services. Similar sets of questions were included for both alcohol and drugs. The nature of the questions are described below.

The questions on perceptions included asking about a person's extent of agreement with statements on:

- . sincerity of commanders attempting to help individuals with problems,
- . probability of searches if people try to get treatment,
- . difficulty in getting off duty for counseling sessions,
- . commander's knowledge about a person getting help,
- . disciplinary action against persons identified as having problems,
- . seeking help will damage the military career.

Similar attitudinal questions were asked of the persons responsible for the alcohol and drug programs on the base.

A second set of questions asked about personal experiences in getting help or treatment for alcohol and drug problems. The items asked about experience since entering the service, such as :

- . professional counseling, treatment, or AA membership,
- . length of time since meeting with a group or getting professional help,
- . off-base or on-base help,
- . military and/or civilian staffing of the program where help was received,
- . type of treatment,
- . extent of help with the problem,
- . change in behavior since getting help, and
- . source of referral for help in treatment.

We also asked about the days in the hospital and visits to doctors in connection with alcohol or drug problems.

The final set of questions asked about knowledge of:

- . education and information programs,
- . counseling programs,
- . referral offices,

10. TREATMENT AND PREVENTION PROGRAMS

Given the substantial amount of alcohol and drug use reported in the present survey, it is important to develop information on the policies and practices designed to combat the problems associated with use and abuse of alcohol and drugs. The two key areas that need to be described are prevention and treatment efforts.

One objective of the 1982 Worldwide Survey was the assessment of the history, availability, and success of treatment, the number of personnel who sought treatment and whether the treatment was in or outside the DoD. The complete accomplishment of this objective would require a more detailed design and a more specifically focused data collection effort than was possible in the present Survey. Data were collected, however, that provide valuable general information on utilization of treatment, and the perceptions of treatment policies and practices relating to alcohol and drug abuse. In this chapter we present a brief description of data collected about treatment from service personnel and also from persons responsible for the alcohol and drug programs in Air Force and Marine installations.

A. Methods

To collect information on treatment, we developed two major approaches. We included 10-12 additional items concerning experience with and perceptions of prevention and treatment programs in the main survey questionnaire. In addition, we used an additional data collection form to gather data from other sources/ personnel on base regarding prevention and treatment programs. The Alcohol and Drug Program Checklist, completed by personnel in charge of the prevention and treatment programs, summarizes information and statistics on the programs currently in operation at each installation.

1. Treatment and Prevention Questions in the Survey Questionnaire

To address the objective of describing experience, knowledge, and perception of treatment and prevention efforts, we needed questions directed specifically at some fundamental aspects of treatment and prevention. Although some questions from the 1980 questionnaire were relevant to this objective, they provided only limited information on treatment or prevention programs.

For the present survey, additional questions were developed which provide information on treatment that more fully meet the objective of describing treatment. Specifically we included three sets of questions concerning

Of course, before either of these strategies is implemented, further research is needed to examine the viability of these approaches in greater detail and develop refined models for their implementation.

provides social support for drug use. Likewise, reasons for not drinking and drinking motivation were important predictors of alcohol use.

In general, problem behavior, attitudes toward drugs, attitudes toward alcohol use, and social support of drugs and alcohol were useful indicators of alcohol and drug use.

Given that an individual was a drug or alcohol user, the consequences of use in both cases was basically a function of problem behaviors and level of drug or alcohol use, respectively, for drug or alcohol consequences.

Overall, the findings indicate that drug and alcohol use and their consequences are a function of behavior patterns and attitudes and that differences in use observed among the Services are due more to different profiles of behavior patterns and attitudes than they are to Service-specific characteristics. That is, once Service was adjusted for the other demographic and psychological variables, there were few and small Service differences remaining.

The regression results suggest at least two policy implications that may be of interest to DoD and the Services. The first is to use the current findings in screening potential recruits who seek entrance to the Services. The problem behavior index offers some promise in this regard. Screening individuals on the basis of problem behaviors (e.g., arrests, fights) that have occurred in the past year could be done if reliable information on the problem behaviors could be obtained. Clearly, only a small percentage of individuals would indicate involvement in such behavior, but there is a strong likelihood that these individuals will also be involved in heavy alcohol consumption and in drug use. Of course, this criterion will not be a perfect predictor and will yield some false positives with the result that some nondrug users will be rejected.

The second policy implication is that since psychological/behavioral variables are subject to modification, emphasis could be given to developing approaches to encourage attitude and behavior change of likely users. Thus, without actually identifying users specifically, education classes could be implemented that employed a theoretical and applied strategy for changing attitudes and behaviors of existing members of the military. The advantage of this approach is that money already invested in training of personnel is not lost if the individuals can be reclaimed. The limitation of the strategy is that it may be difficult to gauge or evaluate the potential or actual success of the effort.

few Service differences remain (Table 9.1). In other words, the differences among the Services that occur for unadjusted means can largely be explained by differences in the demographic and psychological/behavioral composition of personnel who are in the Services. For example, the finding that the Air Force shows less ethanol use on the unadjusted means than the other Services can be explained by the fact that the Air Force is composed of more individuals who are older, married, better educated and who experience few problem behaviors, use few drugs, and have attitudes that are unfavorable toward high consumption. Once these factors are controlled for, the level of consumption is comparable among the Services. While it seems clear that compositional differences in the demographic and psychological factors explain Service differences, it is not clear how such compositional differences are produced. Differences may exist in individuals prior to their joining the military, or the Services may shape and influence the attitudinal and behavioral patterns once they have joined. Probably some of both processes occur.

H. Summary

Four regression analyses were conducted that examined alcohol use (ethanol) and its consequences and drug use (30 day) and its consequences. Considered together, the regressions did fairly well in explaining the variability of the criterion measures, ranging from 13 percent for drug use consequences to 29 percent for alcohol use (ethanol). All four regression analyses indicated that the demographic variables were not nearly as important as the psychological/behavioral variables in predicting alcohol and drug use and their consequences. Most interesting was the general lack of significant adjusted differences among Services and among regions. These findings suggest that differences for drug and alcohol use and consequences among the Services and regions is partly a function of the differential composition of personnel in the Services in terms of demographic variables and the psychological/behavioral variables that are related to drug and alcohol use.

All four regression analyses indicated that the psychological/behavioral variables were extremely important predictors of all four criterion measures. The Problem Behavior Index was one of the strongest predictors across all four analyses. Involvement in general problem behaviors (e.g., fights, arrests, jail) were predictive of both alcohol and drug use and their consequences. Other important indicators of drug use were attitudes towards drugs, their believed effects on health and work, and an environment that

Table 9.2. Effects of Adjusting for Regression Model Variables on Criterion Variables in the Services

Criterion Variable	Service			
	Army	Navy	Marine Corps	Air Force
Average Daily Ounces of Ethanol				
Unadjusted Means	1.97	1.60	1.81	1.18
Adjusted Means	1.73	1.84	1.71	1.70
Number of Alcohol Use Consequences				
Unadjusted Means	.62	.50	.75	.31
Adjusted Means	.57	.56	.64	.58
Probability of 30 Day Drug Use				
Unadjusted Means	.30	.16	.22	.13
Adjusted Means	.25	.16	.21	.20
Number of Drug Use Consequences				
Unadjusted Means	.73	.51	.65	.27
Adjusted Means	.56	.58	.57	.48

Note: Parameters appearing in the regression models are shown in Table 9.1. Unadjusted means show the values for the Services without controlling for any other variables. All tables in prior chapters of this report that are displayed by Service contain unadjusted values. Statistical tests for each criterion variable on the unadjusted means show a highly significant difference ($p < .001$) among the Services.

Adjusted means show the values for the Services after controlling for all other variables in the regression models. After the adjustment, significant differences occur only for the drug use criterion. The adjusted means do not differ significantly among the Services for ethanol consumption, alcohol use consequences or drug use consequences (see Table 9.1).

by only a few key variables as described above. Taken together, these two regressions suggest a two-stage model for predicting consequences of drug use.

G. Understanding Service Differences

A major thrust of the current report has been the presentation of data on drug and alcohol use among the Services. Four important variables from these earlier analyses (ethanol use, alcohol use consequences, drug use, drug use consequences) have been examined in this chapter. The results from the regression analyses suggest that Service as a variable plays a small role in explaining alcohol and drug use behavior. However, in view of the rather substantial differences that were apparent among the Services on these criterion variables in prior chapters, it is of interest to examine the effects of Service more closely.

One approach to understanding Service effects is to compare mean values that are unadjusted for any other variables to mean values that have been adjusted for the other variables. Table 9.2 presents the unadjusted and adjusted means for the four criterion variables that were examined in the regression analyses. Statistical tests on the unadjusted means for each criterion variable showed a highly significant difference among the Services ($p < .001$). For example, the Air Force has a significantly lower (unadjusted) mean for ounces of ethanol than the other services. Similar differences among the Services are apparent for the other criterion variables for the unadjusted means.

The adjusted means reported in Table 9.2 show the differences among the Services that remain after controlling for all of the variables in the regression models. As can be seen in Table 9.1 there are no significant differences among the Services for ethanol consumption, alcohol use consequences, or drug use consequences. Drug use shows significant adjusted differences among the Services, but the differences are very small. Overall, then, substantial differences among the Services become very small and generally nonsignificant after adjusting for the variables in the regression model.

These findings indicate that if no other variables are considered, substantial differences exist among the services on the criterion variables. However, there are many differences in demographic and psychological/behavioral factors of personnel in the Services and to ignore these differences presents an unfair comparison. After differences for these variables have been controlled,

F. Consequences of Drug Use

The final regression analysis examined consequences of drug use and was based on the 5,205 enlisted personnel who were classified as drug users. The criterion variable was the total number of serious consequences experienced as a result of drug use during the past 12 months. The regression results appear in Table 9.1 and show that the total model explained 13 percent of the variability in drug use consequence.

The consequences of drug use are virtually unpredictable from demographic variables. The R^2 for demographic variables alone is only .020 with none of the independent variables producing significant effects. In general, given that a person is a user, the number of consequences experienced is about the same across Services, regions, education level, marital status, and sex groups. This occurs, of course, after controlling for all the other variables in the model.

In contrast, the psychological/behavioral characteristics as a set, added an additional R^2 of .111 to the model for a total R^2 of .131. The psychological/behavioral variables are much more predictive of drug use consequences than the demographic variables. In fact, alone they can predict drug use consequences essentially as well as the full model that incorporates both groups of variables. Two of the psychological/behavioral variables stand out as important predictors: the Problem Behavior Index and the drug use contrast of other drugs with marijuana only. An increase in the problem behavior index of one standard deviation is associated with an increase of .239 consequences. Similarly, use of drugs besides marijuana only is accompanied by an increase of .277 consequences. These two variables alone would, no doubt, account for a considerable proportion of the R^2 for the full model. Needing an upper at work and smoking level also contribute to the explanation of drug use consequences.

The analyses indicate that if a person is a drug user, the drug use consequences that are experienced will be mainly a function of the level of drug usage and problem behaviors experienced in the past. A few other variables, as mentioned above, play a smaller role in prediction. The previous regression analysis indicated that many variables, mainly psychological and behavioral, predict whether or not a person will use a drug. However, the consequences of drug use, once a person is identified as a user, are predicted

use of regression analysis, some caution must be exercised in the interpretation of the results.

The results of the regression analysis are presented in Table 9.1. The psychological/behavioral variables include a number of different indexes than used in the prior two regressions. Overall, the full model produced an R^2 of .273, and like prior regressions showed that the psychological/behavioral variables were more important than the demographic variables. For the demographic variables the R^2 was .089, whereas the psychological/behavioral variables contributed an additional R^2 of .184. The pattern of significant regression coefficients in Table 9.1 also clearly indicates that the demographic variables as a set are not nearly as important as the psychological/behavioral variables in explaining drug use.

Demographic variables were less important than psychological/behavioral variables in explaining drug use behavior. They accounted for 9 percent of the total variation. Significant differences occurred for Service, education, marital status, region, pay grade, and age, but even among these, regression parameters were quite small. Probabilities of greater drug use were associated with being in the Army compared to the Air Force (.054), and in the Air Force compared to the Navy (.033). Additionally, there is a significantly increased probability of drug use for those who are less educated (.036), single or married with spouse not present (.036), younger (.004), of E1-E5 pay grade (.037), and serving in Europe compared to the North Pacific (.066).

Psychological/behavioral variables explained most of the variation of drug use behavior in the regression model, contributing an additional 18 percent of the total 27 percent of explained variance. All of the psychological/behavioral variables were significant. The most important variables were the Drugs Impair Work/Health Index, Drug Social Support Index, and the Problem Behavior Index. For example, change of one standard deviation among beliefs that drug use is not harmful to health and work performance is associated with an increase of .10 in the probability of drug use. A change in the Problem Behavior Index or the Drug Social Support Index is associated with a change of probability of use of .029 and .040, respectively. The remaining psychological/behavioral scales are somewhat less important, but, nevertheless, contribute to the explanation of drug use.

of additional variation beyond that of the demographic variables. In contrast to the demographic variables, all but three of the psychological/behavioral variables were statistically significant. Of the psychological variables, Problem Behaviors, Drug Use Patterns, and Drinking Motivation were clearly the most important variables. An increase in one standard deviation in the Problem Behavior Index is associated with an increase of .456 consequences on the average. Drug use that encompasses more than marijuana only use is accompanied by an increase of .276 consequences, and an increase of one standard deviation on the drinking motivation index is expected to produce an increase of .176 consequences. Since the addition of the psychological/behavioral measures incremented the R^2 .254 (from .036 to .290), they alone can do about as well in explaining consequences of alcohol use as the full model.

E. Drug Use During the Past 30 Days

In this section, attention is directed to explaining drug use behavior. Initially two regressions were computed, one for 30 day use and the other for 12 month use. Since results were very similar, only the 30-day analysis is described here. The criterion variable for drug use in the regression analysis was a binary variable (1=use, 0=no use) created by dichotomizing the 30 day number of drugs index. Weighted least squares were used where each observation was weighted by its sampling weight. The use of a 0-1 dependent variable means that probabilities are being modelled. That is, for a continuous independent variable the regression parameter shows the change in probability of use for one unit of change in that independent variable; for categorical variables the regression parameter is the difference in probabilities for contrasts between levels of the variable. The vector of regression parameters is also proportional to the vector of linear discriminant function analysis weights for a two group discriminant analysis (i.e., users versus nonusers). Significant regression parameters indicate the variables that are associated with the probability of use or, equivalently, that discriminate between users and nonusers.

There are some problems in using a binary dependent variable in a regression model. First, the dependent variable has non-constant variance so that least square estimates (even when weighted by sample weights) are inefficient though unbiased. Second, predicted probabilities can fall outside of the 0-1 range. Although neither of these problems is so severe as to preclude the

consumption. A change in one standard deviation on either scale is associated with a change of about four-tenths of an ounce (approximately one drink) of daily ethanol consumption (.420 and .453, respectively). In addition, drug use patterns also contribute to an understanding of ethanol consumption. Marijuana only users consume approximately four-tenths of an ounce/day more alcohol than nonusers. Other drug use either singly or in combination is accompanied by an increase of nearly three fourths of an ounce/day (.737) over that consumed by marijuana only users. Reasons for not drinking, needing a drink at work, and smoking level are also important indicators of ethanol consumption.

Overall, the psychological/behavioral variables are much more powerful in explaining ethanol use than are the demographic variables. The demographic variables would add little to a model based upon psychological/behavioral variables alone. This is fortunate since demographic characteristics (e.g., sex, race) cannot be changed, whereas attitudes and beliefs can generally be modified. The results of the regression model suggest that when the differences in composition of people in the Services (i.e., demographic and psychological/behavior traits) are controlled for, no significant differences remain among the Services in ethanol consumption.

D. Consequences of Alcohol Use

The next regression model attempted to explain the total number of adverse consequences occurring as a result of alcohol use among enlisted personnel. Abstainers were excluded from this analysis. Nonetheless, since most military personnel use alcohol to some extent, most of the sample were included (N = 16,326). The same independent variables used in the prior regression model were also used here. In addition, average ethanol consumption was added.

The results presented in Table 9.1 show an R^2 of .290 for the full model, the highest for any of the regression analyses described in this chapter. The demographic variables alone make a small contribution in explaining consequences of alcohol use, producing an R^2 of only .034. Race was the only significant demographic predictor. Hispanics experience .129 more consequences than whites and whites experience .111 more consequences than blacks.

Psychological/behavioral variables were clearly the important ones in explaining alcohol use consequences. Together they accounted for 25 percent

contacted, only one did not agree (no opinion was given) that personnel at the installation sincerely tried to help individuals with alcohol problems. Three Air Force directors and one Marine program director agreed that disciplinary action would be taken against individuals identified as having alcohol problems. Only one Air Force program director agreed that it would be difficult getting off duty to attend counseling sessions. These results are more positive than those from the survey of personnel. Again we see evidence that the positive aspects and opinions of programs have not been effectively communicated to the E1-E5 level. Those most knowledgeable persons at the installations seem to feel that programs are effective and that effective mechanisms for referral and support are active at the installation. The major task now appears to be one of convincing personnel, especially those at lower ranks, that individuals with problems can confidently seek treatment.

Another approach to understanding the perceptions about receiving help is to examine their relationship to alcohol problems. Table 10.2 presents data on this issue and shows that perceptions vary with the level of alcohol problems, but few consistent patterns emerge. Overall those who are dependent report the lowest perceptions that people help (42 percent) compared to those affected but not dependent (47 percent) and those not affected (45 percent). Among those not affected E1-E5's have the lowest perception that installation personnel try to help (41 percent), but that pattern does not hold across the other problem categories. For those affected but not dependent, warrant officers (41 percent) and E1-E5's (44 percent) have similar low perceptions and for those classified as dependent, E1-E5's (41 percent) and Warrants (36 percent) are all notably lower than O1-O3's (47 percent) or O4-O6's (54 percent). Thus perceptions vary depending on the alcohol problem category.

2. Drug Problems

In regard to drug abuse, we found that almost half the respondents believe that personnel at the installation sincerely try to help people who have drug problems. On the other questions regarding searches, disciplinary action, and damaging a career when a drug problem was identified, less than one-third of the respondents felt that punitive action would not result. Less than a fourth felt that help for drug problems could be obtained without a unit commander finding out.

Table 10.2. Relationship of Alcohol Problems to Belief That Installation Personnel Try to Help People Who Have a Drinking Problem

Service/Pay Grade	Alcohol Problem Use Categories		
	Not Affected	Adverse Effects	
		Not Dependent	Dependent
Army			
E1-E5	37.7	41.9	39.0
E6-E9	49.8	56.2	35.8
W1-W4	45.3	34.0	36.0
O1-O3	50.9	73.8	66.8
O4-O6	49.4	50.0	41.6
Total	41.9	44.6	39.0
Navy			
E1-E5	41.7	44.5	42.2
E6-E9	57.8	59.5	60.6
W1-W4	77.1	100.0	0.0
O1-O3	60.9	31.4	6.2
O4-O6	69.3	92.7	63.6
Total	47.6	46.2	43.0
Marine Corps			
E1-E5	48.7	41.4	45.1
E6-E9	66.0	67.0	10.6
W1-W4	+	+	+
O1-O3	70.1	96.1	89.2
O4-O6	56.6	100.0	0.0
Total	53.6	44.3	44.1
Air Force			
E1-E5	40.8	50.8	44.5
E6-E9	49.7	61.6	34.6
W1-W4	*	*	*
O1-O3	35.6	42.8	47.0
O4-O6	54.5	49.9	100.0
Total	43.0	51.7	43.9
Total DoD			
E1-E5	40.7	44.4	41.4
E6-E9	53.0	58.8	41.0
W1-W4	51.4	41.3	36.0
O1-O3	47.3	56.0	47.3
O4-O6	56.2	62.8	53.9
Total	44.6	46.5	41.5

Note: Data are percentages.

*Not applicable.

+Fewer than 20 respondents.

Compared to alcohol problems, program directors are less positive regarding treatment for drug problems. In the Air Force, only 10 of the 14 directors felt that counselors sincerely try to help individuals with drug problems. Six of the 8 Marine program directors felt this way. Eleven of 14 Air Force and 6 of 8 Marine directors felt seeking treatment for drug problems could damage a career. Five of the Air Force and one of the Marines felt that seeking treatment for drug problems could result in searches.

These results appear to demonstrate a clear distinction in the perceptions of responses to alcohol and drug programs. There is evidence of less than complete confidence of the opportunity to get help without retribution in the alcohol program by many service personnel. This could severely affect the ability to identify and treat individuals with alcohol problems. The lack of confidence in treatment for drug problems poses different dilemmas. The concern of the military with drug abuse has resulted in a very clear and direct policy. Identifying use as a problem can be perceived as resulting in discharge or other appropriate punitive actions. On the one hand, this policy certainly leads to a reduction in the initiation and continuation of use. Unfortunately, some users who want to stop and who could return as a productive part of the service may be deterred from seeking treatment by the possibility of punitive action. A policy and procedure for disciplinary action for those genuinely seeking help needs to be set, effectively communicated, and consistently enforced. This would reduce the uncertainty about seeking help and could encourage earlier intervention with problems.

C. Treatment

A number of questions on alcohol and drug treatment were included in the main questionnaire. The alcohol and drug program checklist also included questions on treatment. We will first discuss some of the results for the alcohol programs and the same results of parallel items for the drug programs.

1. Alcohol Problems

In Table 10.3 we present data on the percentages of personnel who reported that they met with a group or got professional help for a drinking problem since entering the service. This item seems to be a good indicator of those who sought treatment. Some discrepancies and inconsistencies among the items asking about treatment do exist. However, we feel confident that the estimate of 7.5 percent is reflective of the proportion seeking service or help as broadly defined. Rates are somewhat higher in the Marines (9.9

Table 10.3. Met With Group or Obtained Professional Help for Drinking Problem Since Entering the Military

Region/Pay Grade	Service										Total DoD
	Army		Navy		Marine Corps		Air Force				
Americas											
E1-E5	7.0	(1.1)	7.8	(0.9)	10.7	(0.6)	7.1	(0.9)	7.7	(0.5)	
E6-E9	8.9	(2.0)	12.8	(1.6)	13.5	(1.4)	5.2	(0.9)	9.3	(0.8)	
01-03	1.6	(0.8)	2.1	(2.2)	0.0	(**)	1.0	(0.6)	1.3	(0.5)	
04-06	1.7	(1.6)	1.4	(1.0)	+	(+)	1.5	(1.1)	1.5	(0.7)	
Total	6.6	(0.9)	8.2	(0.7)	10.1	(0.1)	5.5	(1.0)	7.1	(0.4)	
North Pacific											
E1-E5	14.6	(1.8)	9.7	(1.9)	10.6	(0.6)	7.0	(0.2)	10.8	(0.7)	
E6-E9	9.0	(3.0)	14.7	(1.1)	6.9	(2.3)	6.8	(2.0)	8.9	(1.2)	
01-03	4.7	(3.1)	3.3	(3.3)	2.0	(2.2)	0.0	(**)	2.7	(1.3)	
04-06	0.0	(**)	2.6	(2.6)	+	(+)	2.6	(1.7)	1.3	(0.9)	
Total	12.2	(2.4)	9.9	(1.3)	9.5	(0.7)	6.4	(0.4)	9.6	(0.8)	
Other Pacific											
E1-E5	7.5	(0.8)	9.7	(1.2)	8.7	(0.3)	5.8	(0.8)	8.2	(0.5)	
E6-E9	7.6	(1.7)	8.9	(1.6)	7.4	(3.4)	7.9	(0.1)	8.2	(0.8)	
01-03	0.0	(**)	1.6	(1.0)	3.4	(4.5)	1.3	(1.1)	1.4	(0.7)	
04-06	0.0	(**)	1.4	(1.5)	+	(+)	3.0	(1.5)	2.2	(1.3)	
Total	6.2	(1.5)	8.6	(0.9)	8.5	(**)	5.6	(0.4)	7.4	(0.5)	
Europe											
E1-E5	10.8	(0.9)	6.9	(0.3)	10.9	(5.3)	6.9	(1.0)	9.8	(0.7)	
E6-E9	10.4	(0.8)	13.8	(5.5)	+	(+)	7.4	(1.2)	9.8	(0.7)	
01-03	0.6	(0.6)	1.9	(1.6)	+	(+)	0.0	(**)	0.5	(0.4)	
04-06	4.1	(3.9)	3.4	(2.5)	+	(+)	1.9	(1.0)	2.8	(1.4)	
Total	10.1	(0.7)	7.8	(1.5)	9.4	(3.6)	6.2	(0.4)	9.1	(0.5)	
Total Worldwide											
E1-E5	8.6	(0.8)	7.9	(0.8)	10.6	(0.5)	7.0	(0.7)	8.2	(0.4)	
E6-E9	9.2	(1.3)	12.6	(1.4)	12.2	(1.1)	5.7	(0.7)	9.3	(0.6)	
W1-W4 ^a	3.6	(2.7)	1.4	(1.4)	+	(+)	*	(*)	3.3	(2.3)	
01-03	1.5	(0.6)	2.1	(1.9)	0.4	(0.3)	0.9	(0.5)	1.2	(0.5)	
04-06	1.8	(1.3)	1.7	(0.8)	1.1	(1.1)	1.6	(1.0)	1.6	(0.6)	
Total	7.9	(0.6)	8.2	(0.7)	9.9	(0.1)	5.6	(0.8)	7.5	(0.4)	

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

+ Less than 20 respondents.

** Informative standard error not available.

percent) than in the Army (7.9 percent) and Navy (8.2 percent). The lowest rate (5.6 percent) is reported by Air Force personnel.

In addition to knowing the overall rate at which individuals seek treatment it is of interest to know the rate that personnel who experience alcohol problems seek help. For total DoD roughly one fourth of all personnel indicate alcohol problems (23 percent). Of those who indicate problems only 24 percent actively seek some type of professional assistance. The rate is highest in the Marine Corps (30 percent) followed by the Air Force (28 percent), Army (24 percent) and Navy (21 percent). Clearly, the majority of people who could benefit from some type of alcohol treatment are not availing themselves of the help.

Another interesting result is that the highest rate of help or treatment is reported by the noncommissioned officers. About 1 in 10 have sought help since they entered the service. This difference can be explained in a number of ways. Because of the longer time in the service they may have had more opportunity to seek help or they are an older group with a higher probability of having problems that require intervention. More useful comparisons controlling for age, identifying treatment within specific time spans and other factors needs to be indicated to determine if important differences among the pay grades do in fact exist.

The next discussion focuses on individuals that reported receiving help while in the service with general results presented in Table 10.4. About half of those who received help or treatment obtained it in the past year. Most of the persons (four out of five) reported that the help, was received from some group or facility on the base. About half got help from a program staffed both by military and civilian personnel. The type of last treatment included residential detoxification or rehabilitation (10 percent), nonresidential counseling (40 percent) detoxification and counseling (10 percent), Alcoholics Anonymous (20 percent) and other (2 percent). These results show that a wide variety of services are used by military personnel who have problems with alcohol.

About a third of those seeking help reported going on their own without any help or advice. Other ways of arranging for help included recommendations of family, friends, clergy or doctor (a fifth) through military unit or agencies including alcohol program counselors (one third) and through civilian agencies (one tenth).

Table 10.4. Descriptive Information on Last Treatment for Alcohol Use and for Drug Use by Persons Reporting Treatment

	Alcohol Treatment	Drug Treatment
<u>Treatment Location and Staffing</u>		
On Base Treatment	80	80
Military Only or Civilian and Military Staff	85	80
<u>Type of Program</u>		
Residential	10	10
Outpatient Counseling	40	50
Detoxification and Counseling	10	10
Alcoholics Anonymous	20	NA
Others	20	30
<u>Source of Referral</u>		
Self-referral	35 ^a	20 ^a
Family Friend	20	10
Military Unit or Agency	35	20
Order from Commanding Officer	30	25
Military Justice Proceeding	10	15
Other	10	5
<u>Help With Problem</u>		
Very much	35	30
Some	35	25
Not at all	30	45
<u>Current Use Compared to Pretreatment Use</u>		
No Use	15	35
Less	50	35
Same	25	20
More	10	10

Note: Table entries are approximate percentages rounded to the nearest five percent. The data are presented to illustrate the variation in treatment in the military. They should not be interpreted as evaluations of DoD programs in general, programs in each service, or any particular program.

^aMultiple response.

Another important avenue is the command and military justice structure. About 30 percent report that they sought help as a result of an order by their commanding officer. Another 10 percent sought help as a result of a military justice proceeding. These results show that military personnel enter treatment through a variety of sources. This suggests that programs are effectively promoting a variety of approaches to encourage individuals to enter treatment.

The success of the programs is a major concern. Although the design of the Worldwide Survey is not appropriate for an evaluation, the survey does provide some evidence to support the belief in the efficacy of programs. Of the persons who sought help, two out of three report improvement. About 15 percent report no further use and 50 percent report less use of alcohol. Only about 1 in ten say their use of alcohol has increased.

These success estimates are consistent with the rates reported by program directors. In 13 of the 14 Air Force programs, the percentages of personnel completing the program and returning to duty ranged between 60 and 100 percent. In the Marine program the estimates of success are all above 70 percent.

Taken together, the data from these sources seem to indicate that the alcohol programs are having a positive impact. A carefully designed study is necessary to gauge the nature and extent of this positive impact.

2. Drug Programs

Although the number of respondents who reported seeking help for drug problems is only half the number seeking alcohol treatment, the results are very similar. As seen in Table 10.4, the major differences involve the lower levels of self referral, referral through family and friends or referral by military unit or agency. In terms of success, almost half of the participants reported the program did not help them at all. About two-thirds have continued to use drugs, although one third use them less than they did before treatment.

Some of the differences between alcohol and drug program results may be explained in part by different types of clients entering the two types of programs. As with the alcohol programs, more detailed assessment of treatment programs is needed.

D. Prevention and Education Programs

Prevention and education programs are two important ways of combatting alcohol and drug abuse. We asked similar questions about both types of

programs. Two of the more important issues involve the awareness of a program and actual participation in the program.

In Table 10.5 we present the percentages of personnel who indicated awareness of alcohol educational programs. We see a pattern in the results similar to that found in the perception of treatment. Across all services the E1-E5's were much less aware of programs than personnel in higher pay grades. Only 62.5 percent of E1-E5's say that an alcohol education or information program is available on-base at the installation. In contrast, over eighty percent of noncommissioned officers and officers are aware of a program. We also see substantial differences among the services. In the Air Force almost 80 percent of the E1-E5's know about a program. Less than 60 percent of the E1-E5s in the Army and Navy know of programs. About 70 percent of the Marine E1-E5's know about programs. There is a somewhat smaller Service difference among the officers, but the Marine and Air Force officers are generally more aware of programs. The information on awareness of drug information programs presented in Table 10.6 is similar to that for alcohol programs.

To get a better idea of the activity of the program, we asked if the respondent had attended any general alcohol education programs in the past twelve months. In Table 10.7 we see the proportion of personnel attending classes in the past 12 months, by rank, region, and service. About one third of the personnel (36.4 percent) report attending class. In contrast to the earlier tables, we see little difference among the ranks. Alcohol classes do seem more common in the North Pacific Region. Again we see that a higher proportion of Air Force (43.1 percent) and Marine (40.8 percent) personnel have attended class than Army (36.2 percent) and Navy (28.1 percent). The interpretation of these results must be based on the directives issued and the duration of service. It does appear that a large proportion of personnel do not receive information about alcohol and drugs in a regular structured way. More frequent classes or formal information programs would facilitate referral and utilization of intervention and treatment services. The efforts of referral and educational emphasis would need to be traced through the Services in carefully constructed research designs.

E. Summary

Data about alcohol and drug use prevention and treatment experience were obtained from respondents to the Worldwide Survey. Perceptions of treatment

Table 10.5. Awareness of Alcohol Education or Information Program

Region/Pay Grade	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
Americas					
E1-E5	55.4 (4.8)	52.8 (2.5)	68.1 (6.6)	78.6 (0.7)	61.7 (2.0)
E6-E9	78.7 (4.6)	78.9 (1.4)	87.9 (2.7)	86.0 (2.4)	81.6 (1.7)
01-03	74.7 (4.5)	85.0 (5.7)	89.8 (1.2)	85.9 (2.0)	82.6 (2.1)
04-06	81.9 (10.3)	89.2 (4.5)	+ (+)	89.8 (2.6)	88.2 (2.7)
Total	62.6 (4.6)	59.9 (2.9)	72.7 (6.5)	81.9 (0.5)	68.2 (1.9)
North Pacific					
E1-E5	55.7 (5.2)	68.3 (0.7)	69.8 (5.2)	74.6 (4.4)	66.3 (2.5)
E6-E9	82.7 (3.3)	84.3 (1.1)	90.4 (2.5)	85.1 (6.3)	85.3 (2.2)
01-03	80.3 (5.7)	93.1 (-)	93.2 (4.4)	82.1 (5.9)	85.5 (2.7)
04-06	88.3 (3.6)	91.7 (8.3)	+ (+)	89.7 (6.7)	89.6 (3.2)
Total	63.5 (5.4)	74.0 (0.9)	74.6 (4.5)	77.6 (4.7)	71.6 (2.4)
Other Pacific					
E1-E5	64.8 (9.7)	71.7 (2.2)	69.2 (5.5)	71.9 (2.8)	70.0 (2.2)
E6-E9	77.9 (10.0)	83.2 (1.3)	94.8 (6.2)	86.1 (6.3)	83.7 (3.0)
01-03	74.8 (11.6)	85.0 (5.6)	90.6 (0.4)	88.4 (0.8)	85.0 (3.0)
04-06	62.4 (5.7)	83.9 (4.6)	+ (+)	86.4 (3.2)	77.7 (6.4)
Total	68.6 (8.9)	75.8 (2.3)	73.0 (5.9)	77.6 (2.0)	74.4 (2.3)
Europe					
E1-E5	60.2 (3.2)	67.9 (8.9)	61.2 (2.7)	72.4 (1.1)	63.2 (2.4)
E6-E9	83.9 (2.3)	79.6 (5.7)	+ (+)	86.9 (2.4)	84.6 (1.6)
01-03	93.8 (2.1)	85.0 (2.6)	+ (+)	88.4 (2.3)	91.5 (1.4)
04-06	94.0 (4.1)	68.1 (11.9)	+ (+)	93.2 (6.1)	88.0 (5.4)
Total	66.1 (2.8)	72.1 (7.3)	70.7 (3.6)	77.5 (1.1)	69.3 (2.0)
Total Worldwide					
E1-E5	57.2 (3.2)	54.5 (2.3)	68.3 (5.3)	77.3 (0.7)	62.5 (1.5)
E6-E9	80.3 (3.1)	79.4 (1.3)	88.8 (2.2)	86.1 (1.9)	82.3 (1.4)
W1-W4 ^a	77.6 (4.2)	95.9 (2.7)	+ (+)	* (*)	80.6 (4.0)
01-03	78.7 (3.8)	85.2 (4.8)	90.2 (1.0)	86.1 (1.8)	83.8 (1.8)
04-06	82.3 (7.7)	86.7 (4.0)	90.0 (4.1)	90.0 (2.3)	87.7 (2.3)
Total	63.8 (3.1)	61.6 (2.6)	72.9 (5.2)	80.9 (0.5)	68.8 (1.5)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

+ Less than 20 respondents.

Table 10.6. Awareness of Drug Education or Information Program

Region/Pay Grade	Service									
	Army		Navy		Marine Corps		Air Force		Total DoD	
Americas										
E1-E5	52.7	(3.9)	49.2	(2.2)	67.0	(8.6)	75.8	(0.7)	58.8	(1.8)
E6-E9	76.6	(4.8)	80.2	(1.3)	90.2	(0.2)	88.2	(2.2)	82.2	(1.8)
01-03	77.5	(3.8)	82.4	(6.2)	91.1	(4.7)	85.2	(2.5)	82.8	(2.1)
04-06	80.2	(7.7)	89.5	(3.8)	+	(+)	93.3	(2.2)	90.3	(2.2)
Total	60.3	(3.9)	57.3	(2.5)	72.3	(7.7)	80.8	(0.8)	66.4	(1.7)
North Pacific										
E1-E5	52.5	(5.7)	62.8	(0.2)	64.9	(3.7)	71.7	(4.3)	62.4	(2.5)
E6-E9	79.5	(2.5)	82.4	(1.8)	86.6	(0.9)	83.1	(7.2)	82.5	(2.3)
01-03	79.8	(5.9)	95.0	(1.6)	96.4	(3.8)	86.6	(4.3)	87.5	(2.4)
04-06	88.3	(3.6)	89.0	(5.7)	+	(+)	89.7	(6.7)	89.9	(2.7)
Total	60.8	(5.9)	70.0	(0.1)	70.5	(3.8)	75.4	(4.5)	68.5	(2.5)
Other Pacific										
E1-E5	65.8	(11.6)	66.0	(1.6)	66.4	(6.3)	71.7	(0.9)	67.3	(2.6)
E6-E9	75.9	(8.1)	84.2	(2.4)	92.0	(6.5)	88.1	(5.6)	84.0	(2.8)
01-03	74.8	(11.6)	78.8	(4.5)	93.6	(2.4)	89.6	(0.9)	82.9	(3.0)
04-06	65.8	(5.2)	86.1	(0.8)	+	(+)	89.7	(5.1)	81.0	(6.1)
Total	69.1	(9.5)	71.9	(1.8)	70.6	(7.0)	78.3	(0.8)	72.7	(2.3)
Europe										
E1-E5	57.2	(2.8)	67.2	(7.2)	61.0	(2.7)	70.4	(1.8)	60.5	(2.1)
E6-E9	83.2	(2.2)	81.0	(5.3)	+	(+)	89.9	(0.3)	85.0	(1.5)
01-03	92.9	(2.3)	77.2	(8.3)	+	(+)	89.5	(4.0)	90.8	(2.0)
04-06	96.1	(2.5)	74.4	(7.7)	+	(+)	91.4	(5.6)	90.0	(3.8)
Total	63.8	(2.4)	72.2	(6.0)	70.6	(0.1)	76.8	(0.5)	67.4	(1.7)
Total Worldwide										
E1-E5	54.4	(2.6)	50.8	(2.0)	66.6	(6.8)	74.6	(0.7)	59.6	(1.4)
E6-E9	78.6	(3.2)	80.6	(1.2)	89.7	(0.4)	88.2	(1.7)	82.7	(1.4)
W1-W4 ^a	74.2	(6.6)	98.2	(1.7)	+	(+)	*	(*)	77.9	(6.1)
01-03	80.6	(3.3)	82.3	(5.3)	91.5	(4.2)	85.7	(2.3)	83.8	(1.8)
04-06	81.7	(5.9)	87.7	(3.4)	99.4	(0.6)	92.9	(2.0)	89.7	(1.9)
Total	61.6	(2.6)	58.9	(2.3)	71.9	(6.1)	79.9	(0.7)	66.9	(1.3)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

+ Less than 20 respondents.

Table 10.7. Attendance at Alcohol Education Classes During Past 12 Months

Region/Pay Grade	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
Americas						
E1-E5	33.6 (3.8)	28.0 (3.2)	34.8 (11.8)	46.9 (3.5)	35.1 (2.2)	
E6-E9	46.5 (4.5)	28.6 (4.8)	59.1 (13.5)	31.4 (2.1)	37.2 (2.5)	
01-03	42.5 (5.8)	28.7 (3.4)	35.6 (5.6)	41.7 (2.4)	39.2 (2.5)	
04-06	24.6 (3.3)	19.5 (5.1)	+ (+)	31.9 (2.8)	28.3 (2.3)	
Total	36.5 (3.4)	27.9 (3.1)	38.1 (11.7)	42.2 (2.4)	35.6 (1.9)	
North Pacific						
E1-E5	39.5 (1.6)	26.9 (2.7)	51.6 (4.4)	53.4 (5.7)	44.4 (2.0)	
E6-E9	62.4 (5.7)	32.4 (1.6)	66.0 (7.2)	53.0 (12.2)	55.4 (4.3)	
01-03	49.8 (6.2)	27.6 (3.4)	73.3 (6.8)	54.6 (5.2)	51.6 (3.1)	
04-06	46.6 (4.5)	21.8 (6.0)	+ (+)	46.8 (18.4)	44.4 (6.4)	
Total	45.0 (2.6)	28.0 (2.1)	55.1 (4.4)	53.2 (7.1)	47.0 (2.4)	
Other Pacific						
E1-E5	31.0 (0.2)	27.6 (3.6)	40.6 (9.8)	41.0 (4.0)	33.6 (2.4)	
E6-E9	39.9 (4.4)	32.6 (2.9)	59.1 (0.2)	33.1 (0.2)	36.3 (1.5)	
01-03	29.0 (8.0)	25.5 (3.2)	54.6 (6.1)	45.4 (12.1)	34.8 (4.0)	
04-06	11.4 (7.4)	22.7 (4.8)	+ (+)	33.9 (0.9)	25.5 (6.7)	
Total	31.4 (2.8)	28.4 (3.1)	44.0 (8.0)	39.1 (0.8)	33.9 (1.8)	
Europe						
E1-E5	31.3 (1.6)	38.5 (11.0)	58.9 (11.9)	42.5 (2.6)	34.2 (1.4)	
E6-E9	46.0 (2.9)	35.2 (3.9)	+ (+)	52.3 (2.9)	47.3 (2.1)	
01-03	48.4 (3.2)	33.2 (4.0)	+ (+)	57.1 (8.9)	50.6 (3.9)	
04-06	34.5 (7.4)	17.3 (4.1)	+ (+)	52.1 (7.5)	38.6 (2.7)	
Total	34.5 (1.5)	34.9 (7.1)	55.0 (7.7)	46.0 (2.9)	37.5 (1.3)	
Total Worldwide						
E1-E5	33.0 (2.4)	28.1 (2.9)	37.6 (9.6)	46.4 (2.7)	35.4 (1.7)	
E6-E9	46.9 (3.1)	29.2 (4.1)	60.2 (10.6)	35.7 (1.8)	39.7 (1.9)	
W1-W4 ^a	38.6 (4.8)	22.4 (11.1)	+ (+)	* (*)	37.8 (4.9)	
01-03	43.8 (4.3)	28.6 (2.9)	40.5 (2.9)	43.4 (2.1)	40.7 (2.0)	
04-06	26.0 (3.2)	19.6 (4.0)	39.4 (9.8)	33.9 (2.2)	29.7 (1.8)	
Total	36.2 (2.2)	28.1 (2.7)	40.8 (9.4)	43.1 (1.9)	36.4 (1.4)	

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

+ Less than 20 respondents.

policies and actual treatment experience were examined both for alcohol use and drug use.

- . Slightly under half (45 percent) of the respondents agreed that personnel at their installation sincerely try to help people with a drinking problem. The perception differs by rank with E1-E5's least likely to agree (41 percent versus 48 to 57 percent for other pay grades).
- . Differences in perceptions that installation personnel try to help people with alcohol problems varied across alcohol problem categories. Overall, those who were dependent had the lowest belief that personnel help (42 percent) compared to those affected (45 percent).
- . About half of the respondents believe that installation personnel try to help people who have drug problems.
- . Of those who report alcohol problems only 24 percent seek treatment.
- . E6-E9 personnel show the highest rate of help or treatment (about 10 percent) for alcohol use.
- . About half of the people getting help in alcohol programs reported that they received it during the past 12 months.
- . Drug programs have approximately half the number seeking help as do alcohol programs.
- . E1-E5's (63 percent) are less aware of programs than personnel in other pay grades (81 percent to 88 percent).
- . Awareness of alcohol programs vary by Service. In the Air Force 80 percent of E1-E5's know about a program compared to 60 percent in the Army and Navy and 70 percent in the Marines.
- . Awareness of drug education programs or classes is highly similar to awareness of alcohol education classes.
- . About a third of personnel (36 percent) reported attending an alcohol education class during the past year.

Appendix A
Survey Questionnaire



1982 DEPARTMENT OF DEFENSE SURVEY OF ALCOHOL AND NONMEDICAL DRUG USE AMONG MILITARY PERSONNEL

You have been randomly selected to participate in this important Department of Defense survey. Please read the instructions below before you begin the questionnaire.

NOTICE

This survey is anonymous. Do not write your name or Social Security Number anywhere on this questionnaire so that no one can ever link this questionnaire or your personal responses with your identity.

Your participation in this survey is voluntary. You are encouraged to provide complete and accurate information, but you are not required to answer any questions to which you object.

Your responses to this survey will be combined with similar information from other military personnel to prepare a statistical report. The Research Triangle Institute, a not-for-profit research company, has primary research and analysis responsibility under contract to the Assistant Secretary of Defense — Health Affairs.

INSTRUCTIONS FOR COMPLETING THE SURVEY

- Use only the pencil you were given.
- Make heavy black marks that fill the circle for your answer.
- Most questions provide a set of answers. Read all the answers printed before marking your choice. If none of the printed answers exactly applies to you, mark the circle for the one answer that best fits your situation.
- For many questions, you should mark only one circle for your answer in the column below the question, as shown here

CORRECT MARK



INCORRECT MARKS



EXAMPLE How would you describe your health in general?

- ☐ Excellent
☒ Good
☐ Fair
☐ Poor

- Sometimes you will be asked to "Mark one circle on each line." For these questions, record an answer for each part of the question, as shown here:

EXAMPLE How often do you do each of the following?

(Mark one circle on each line)

Often Sometimes Never

A	Swim	☒	☐	☐
B	Bowl	☐	☐	☒
C	Play tennis	☐	☒	☐

- Erase cleanly any answer you wish to change
- Do not make stray marks of any-kind anywhere in this booklet.

PREVIOUS PAGE
IS BLANK



DO NOT PLACE YOUR NAME OR SOCIAL SECURITY NUMBER ANYWHERE ON THIS QUESTIONNAIRE.

5. The following statements describe some things connected with using drugs that affect people on their working days. Please indicate on how many working days in the past 12 months these things ever happened to you.

(Mark one circle on each line)

NUMBER OF WORK DAYS EVENT HAPPENED
IN PAST 12 MONTHS

40 or More	21- 39	12- 20	7-11	4-6	3	2	1	None

A	I worked below my normal level of performance because of my use of drugs	☐	☐	☐	☐	☐	☐	☐	☐
B	I was late for work or left work early because of my use of drugs	☐	☐	☐	☐	☐	☐	☐	☐
C	I did not come to work at all because of the after effects, an illness, or a personal accident caused by my use of drugs	☐	☐	☐	☐	☐	☐	☐	☐
D	I was hurt in an on-the-job accident because of my use of drugs	☐	☐	☐	☐	☐	☐	☐	☐
E	I was "high" while working because of my use of drugs	☐	☐	☐	☐	☐	☐	☐	☐
F	I was called in during off-duty hours and reported while "high" from my use of drugs	☐	☐	☐	☐	☐	☐	☐	☐

6. Here are some statements about things that happen to people. How many times in the past 12 months did each of the following happen to you?

(Mark one circle on each line)

NUMBER OF TIMES EVENT HAPPENED
IN PAST 12 MONTHS

7 or More	4-6	3	2	1	Never

A	I had an illness connected with my use of drugs that kept me from duty for a week or longer	☐	☐	☐	☐	☐	☐
B	I didn't get promoted because of my use of drugs	☐	☐	☐	☐	☐	☐
C	I got a lower score on my efficiency report or performance rating because of my use of drugs	☐	☐	☐	☐	☐	☐
D	I received UCMJ punishment (Court Martial, Article 15, Captain's Mast, Office Hours) because of my use of drugs	☐	☐	☐	☐	☐	☐
E	I was arrested for driving under the influence of drugs	☐	☐	☐	☐	☐	☐
F	I was arrested for a drug incident not related to driving	☐	☐	☐	☐	☐	☐
G	I spent time in jail, stockade, or brig because of my use of drugs	☐	☐	☐	☐	☐	☐
H	I was hurt in any kind of accident caused by my use of drugs	☐	☐	☐	☐	☐	☐
I	My use of drugs caused an accident where someone else was hurt or property was damaged	☐	☐	☐	☐	☐	☐
J	I hit my mate or the person I date because of my use of drugs	☐	☐	☐	☐	☐	☐
K	I hit my children because of my use of drugs	☐	☐	☐	☐	☐	☐
L	I got into a fight where I hit someone other than my family when I was using drugs	☐	☐	☐	☐	☐	☐
M	My wife or husband threatened to leave me because of my use of drugs	☐	☐	☐	☐	☐	☐
N	My wife or husband left me because of my use of drugs	☐	☐	☐	☐	☐	☐
O	I had to be detoxified because of my use of drugs	☐	☐	☐	☐	☐	☐

For each experience listed below, please indicate on how many days you were sick during the past 12 months because you used or stopped using drugs. (Sick means that you had symptoms such as: runny nose or eyes, flushed or sweaty, chills, nausea or vomiting, stomach cramps, diarrhea, muscle pains, severe headaches, etc.)

NUMBER OF DAYS SICK IN PAST 12 MONTHS

40 or More 21-39 12-20 7-11 4-6 3 2 1 None

(Mark one circle on each line)

- A I was sick because of using drugs
- B I was sick because I stopped using drugs like: heroin, other opiates, barbiturates, other downers, or tranquilizers
- C I was sick because I stopped using drugs like: marijuana, hashish, PCP, LSD, other hallucinogens, amphetamines, cocaine, other uppers, or glue/inhalants

2. Listed below are some of the places where people use drugs for non-medical purposes. How often do you use drugs (any kind) in each of the following places?

About Every Day 5-6 Days a Week 3-4 Days a Week 1-2 Days a Week 1-3 Days a Month Less Often than Monthly Never

(Mark one circle on each line)

- A My quarters or place of residence (including ships)
- B Enlisted, NCO, or officers' club
- C On-base quarters of friends
- D Off-base homes or residences of friends
- E Civilian bar, tavern, nightclub, or lounge
- F Driving around or sitting in a car
- G Out in the open, like at a sports event or picnic

3. Listed below are some of the companions with whom people use drugs for non-medical purposes. How often do you use drugs (any kind) with each of the following types of companions (regardless of whether or not they use drugs too)?

About Every Day 5-6 Days a Week 3-4 Days a Week 1-2 Days a Week 1-3 Days a Month Less Often than Monthly Never

(Mark one circle on each line)

- A With my mate or the person I date
- B Alone when no one else is around
- C With close friends, military only
- D With close friends, including civilians
- E With co-workers
- F With only acquaintances or strangers

For each statement below, please indicate how often you have had this experience during the past 12 months.

HOW OFTEN EXPERIENCED IN PAST 12 MONTHS

About Every Day 5-6 Days a Week 3-4 Days a Week 1-2 Days a Week 1-3 Days a Month Less Often Than Monthly Never

(Mark one circle on each line)

- A I awakened unable to remember some of the things I had done while using drugs the day before
- B I took several doses of a drug at one time to get a stronger effect
- C My hands shook a lot after using drugs the day before
- D I had to use a drug first thing after waking up to get going
- E I stayed "high" on drugs for more than one day at a time
- F I had the "shakes" because of my use of drugs
- G I skipped three or more regular meals while I was using drugs
- H I got into a fight where I hit someone when I was using drugs
- I I used more drugs than I planned to

68. Think about the days you worked (duty days) during the past 30 days. How often did you use each of the following drugs for non-medical purposes while you were working (on-the-job)?

(Mark one circle on each line)

	Every Work Day	Most Work Days	About Half My Work Days	Several Work Days	One or Two Work Days	Never in Past 30 Days
A. Marijuana or hashish	☐	☐	☐	☐	☐	☐
B. PCP	☐	☐	☐	☐	☐	☐
C. LSD or other hallucinogens	☐	☐	☐	☐	☐	☐
D. Cocaine	☐	☐	☐	☐	☐	☐
E. Amphetamines or other stimulants	☐	☐	☐	☐	☐	☐
F. Tranquilizers	☐	☐	☐	☐	☐	☐
G. Barbiturates or other sedatives	☐	☐	☐	☐	☐	☐
H. Heroin	☐	☐	☐	☐	☐	☐
I. Other opiates	☐	☐	☐	☐	☐	☐
J. Other drugs	☐	☐	☐	☐	☐	☐

69. On work days during the past 30 days, how often did you use each of the following drugs for non-medical purposes 2 hours or less before going to work, during lunch break, or during a work break?

(Mark one circle on each line)

	Every Work Day	Most Work Days	About Half My Work Days	Several Work Days	One or Two Work Days	Never in Past 30 Days
A. Marijuana or hashish	☐	☐	☐	☐	☐	☐
B. PCP	☐	☐	☐	☐	☐	☐
C. LSD or other hallucinogens	☐	☐	☐	☐	☐	☐
D. Cocaine	☐	☐	☐	☐	☐	☐
E. Amphetamines or other stimulants	☐	☐	☐	☐	☐	☐
F. Tranquilizers	☐	☐	☐	☐	☐	☐
G. Barbiturates or other sedatives	☐	☐	☐	☐	☐	☐
H. Heroin	☐	☐	☐	☐	☐	☐
I. Other opiates	☐	☐	☐	☐	☐	☐
J. Other drugs	☐	☐	☐	☐	☐	☐

70. How often do you use alcohol (beer, wine, or hard liquor) with each of the following drugs at the same time?

(Mark one circle on each line)

	USE ALCOHOL WITH THIS DRUG				
	All of the Time	Most of the Time	About Half of the Time	Some of the Time	Never
A. Marijuana or hashish	☐	☐	☐	☐	☐
B. PCP	☐	☐	☐	☐	☐
C. LSD or other hallucinogens	☐	☐	☐	☐	☐
D. Cocaine	☐	☐	☐	☐	☐
E. Amphetamines or other stimulants	☐	☐	☐	☐	☐
F. Tranquilizers	☐	☐	☐	☐	☐
G. Barbiturates or other sedatives	☐	☐	☐	☐	☐
H. Heroin	☐	☐	☐	☐	☐
I. Other opiates	☐	☐	☐	☐	☐
J. Other drugs	☐	☐	☐	☐	☐

The next set of questions is about use and availability of drugs. First, we will list the types of drugs we are interested in, along with some of their most common trade and "street" names.

<u>DRUG TYPES</u>	<u>COMMON TRADE/CLINICAL NAMES</u>	<u>COMMON "STREET" NAMES</u>
Marijuana or hashish	Cannabis, THC	Pot, Grass, Hash
PCP	---	Angel Dust, Krystal
LSD, Other Hallu- cinogens	LSD, Mescaline, Peyote, DMT, Psilocybin	Acid, Cactus, Buttons
Cocaine	---	Coke, Snow, Toot
Amphetamines and Other Stimulants	Benzedrine, Methadrine, Dexedrine, Biphedamine Preludin, Ritalin, Sanorex	Uppers, Bennies, Speed, Black Beauties, Dex, Meth
Tranquilizers	Librium, Valium, Miltown, Equanil, Thorazine	Tranks, Downs
Barbiturates and Other Sedatives	Seconal, Nembutal, Amytal, Tuinal, Phenobarbital, Quaalude, Sopor, Optimil, Placidyl, Methqualone	Downers, Blues, Reds, Yellows, Yellow Jackets, Phennies, Ludes, Q's, Sopors
Heroin	---	Smack, Junk, Horse, Scag
Other Opiates	Morphine, Opium, Methadone, Demerol, Codeine, Dilaudid, Talwin, Percodan	M, Miss Emma, Schoolboy, Demies, Velvet, Dollies, T's
Other Drugs	All other drugs not mentioned above, like over-the-counter drugs (No-Doz, Triple X, sleeping aids, etc.) and inhalants (such as glue, amyl nitrate, laughing gas, etc.) <u>except</u> coffee, tea, or tobacco.	

Although some of the drugs listed above may be prescribed for medical reasons, the questions that follow refer to use of these drugs for non-medical purposes — that is, for highs, for thrills, to relax, to give insight, or for pleasure. Please take your time and answer the questions as accurately as possible. Remember, NO ONE will ever be able to link your answers with your identity.

67. During the past 30 days, on about how many days did you use each of the following drugs for non-medical purposes?

		NUMBER OF DAYS USED DRUG IN PAST 30 DAYS					
		28-30 Days	20-27 Days	11-19 Days	4-10 Days	1-3 Days	Never in Past 30 Days
(Mark one circle on each line)							
A	Marijuana or hashish	☐	☐	☐	☐	☐	☐
B	PCP	☐	☐	☐	☐	☐	☐
C	LSD or other hallucinogens	☐	☐	☐	☐	☐	☐
D	Cocaine	☐	☐	☐	☐	☐	☐
E	Amphetamines or other stimulants	☐	☐	☐	☐	☐	☐
F	Tranquilizers	☐	☐	☐	☐	☐	☐
G	Barbiturates or other sedatives	☐	☐	☐	☐	☐	☐
H	Heroin	☐	☐	☐	☐	☐	☐
I	Other opiates	☐	☐	☐	☐	☐	☐
J	Other drugs	☐	☐	☐	☐	☐	☐

57. Since entering the Service, have you ever had professional counseling or treatment or joined a group (such as AA) to get help for a drinking problem?

- ☐ Yes
☐ No

58. When did you meet with a group or get professional help for a drinking problem the last time (since entering the Service)?

- ☐ Within the past 30 days
☐ Within the past year but not in the past 30 days
☐ Over one year ago
☐ Haven't gotten help since entering the Service

59. Where did you get help for a drinking problem the last time (since entering the Service)?

- ☐ On-base
☐ Off-base
☐ Haven't gotten help since entering the Service

60. Who staffs the program where you got help for a drinking problem the last time (since entering the Service)?

- ☐ Military personnel only
☐ Civilian personnel only
☐ Both military and civilian personnel
☐ Haven't gotten help since entering the Service

What type of treatment or help did you get for a drinking problem the last time (since entering the Service)?

- ☐ Residential (overnight stay) detoxification or rehabilitation
☐ Nonresidential counseling (no overnight stay)
☐ Both detoxification and counseling programs
☐ AA (Alcoholics Anonymous group)
☐ Other
☐ Haven't gotten help since entering the Service

How much did your experience with the treatment program (since entering the Service) help you with your drinking problem?

- ☐ Helped very much
☐ Helped some
☐ Didn't help at all
☐ Haven't gotten help since entering the Service

63. Are you now drinking more, about the same, or less than you did before you got help the last time (since entering the Service)?

- ☐ Don't drink alcohol at all since I got help
☐ Drink less now
☐ Drink about the same as before I had help
☐ Drink more now
☐ Haven't gotten help since entering the Service

64. The last time you got help or treatment for a drinking problem (since entering the Service), did you arrange to get it in the following ways?

(Mark one circle on each line)

	Yes	No	Haven't Gotten Help
A. On your own without any help or advice	☐	☐	☐
B. On the recommendation of a friend, family member, clergyman, or doctor	☐	☐	☐
C. Through military unit or assistance agency, education program, referral office, or alcohol counselor	☐	☐	☐
D. As a result of an order from your commander	☐	☐	☐
E. As a result of a military justice proceeding	☐	☐	☐
F. Through civilian assistance agency, education program, referral office, or alcohol counselor	☐	☐	☐

65. When did you last drink any kind of alcoholic beverage — beer, wine, or hard liquor?

- ☐ Today
☐ 1-7 days ago
☐ 8-14 days ago
☐ 2-4 weeks ago
☐ 5-8 weeks ago
☐ 2-3 months ago
☐ 4-6 months ago
☐ 7-12 months ago
☐ More than one year ago
☐ Never drank any beer, wine, or hard liquor

66. Are the following services available on-base at this installation?

(Mark one circle on each line)

	Yes	No	Don't Know
A. Alcohol education or information program (classes, an office, printed material)	☐	☐	☐
B. Alcohol counseling program	☐	☐	☐
C. Alcohol referral office	☐	☐	☐
D. Alcohol detoxification program	☐	☐	☐
E. Alcoholics Anonymous (AA)	☐	☐	☐

The word installation, as used in this questionnaire, refers to your post, camp, base, station, or other geographic duty location. Navy and Marines Assigned to Ships: The word installation refers to your ship when in home port.

50. Please indicate how much you agree or disagree with each of the following statements.

(Mark one circle on each line)

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know / No Opinion
A The personnel at this installation sincerely try to help people who have a drinking problem	☐	☐	☐	☐	☐
B Most of my friends drink	☐	☐	☐	☐	☐
C Drinking is part of being in the military	☐	☐	☐	☐	☐
D Persons who try to get treatment for alcohol problems will later experience surprise searches of themselves, their auto, or their quarters	☐	☐	☐	☐	☐
E There would be less drinking at this installation if the prices of beer, wine, and hard liquor were raised to match off-base prices	☐	☐	☐	☐	☐
F My mate or the person I date disapproves of my drinking	☐	☐	☐	☐	☐
G Persons who want treatment for alcohol problems have difficulty getting off duty to attend counseling sessions	☐	☐	☐	☐	☐
H Drinking is just about the only recreation available at this installation	☐	☐	☐	☐	☐
I Drinking might interfere with my work	☐	☐	☐	☐	☐
J There is no way to get help for a drinking problem without one's commander finding out	☐	☐	☐	☐	☐
K At parties or social functions at this installation, everyone is encouraged to drink	☐	☐	☐	☐	☐
L Drinking costs too much	☐	☐	☐	☐	☐
M The number of "happy hours" at this installation makes drinking easy	☐	☐	☐	☐	☐
N Drinking might interfere with my health or physical fitness	☐	☐	☐	☐	☐
O Disciplinary action will be taken against any person identified as having a drinking problem	☐	☐	☐	☐	☐
P Driving while intoxicated on-base at this installation is a sure way to get arrested	☐	☐	☐	☐	☐
Q The military's alcohol education program has helped me make better decisions about drinking	☐	☐	☐	☐	☐
R Use of alcohol is against my religious beliefs	☐	☐	☐	☐	☐
S Seeking help for a drinking problem will damage one's military career	☐	☐	☐	☐	☐
T There are some times at work when I need a drink	☐	☐	☐	☐	☐

51. During the past 12 months, how much of a problem has drinking been to you?

- ☐ Quite a serious problem
- ☐ A considerable problem
- ☐ A mild problem
- ☐ No problem at all

52. Do you need help now for a problem related to your drinkin' ?

- ☐ Yes
- ☐ No
- ☐ Don't know

53. Do any of your dependents need help for a drinking problem?

- ☐ I don't have any dependents
- ☐ Yes, some help is needed
- ☐ No help is needed
- ☐ Don't know

54. Do any of your friends or acquaintances in the military need help for a drinking problem?

- ☐ Yes, some help is needed
- ☐ No help is needed
- ☐ Don't know

55. Are you now drinking more, about the same, or less than you did before you entered the Service?

- ☐ Drink more now
- ☐ Drink about the same
- ☐ Drink less now
- ☐ Did not drink before entering the Service and do not drink now

56. Are you now drinking more, about the same, or less than you did before you came to this installation?

- ☐ Drink more at this installation
- ☐ Drink about the same
- ☐ Drink less at this installation
- ☐ Did not drink before coming to this installation and do not drink now

48. For each statement below, please indicate how often you have had this experience during the past 12 months.

(Mark one circle on each line)

	HOW OFTEN EXPERIENCED IN PAST 12 MONTHS						
	About Every Day	5-6 Days a Week	3-4 Days a Week	1-2 Days a Week	1-3 Days a Month	Less Often than Monthly	Never
A. I awakened unable to remember some of the things I had done while drinking the day before	☐	☐	☐	☐	☐	☐	☐
B. I tossed down several drinks pretty fast to get a quicker effect	☐	☐	☐	☐	☐	☐	☐
C. My hands shook a lot after drinking the day before	☐	☐	☐	☐	☐	☐	☐
D. I could not stop drinking before becoming drunk	☐	☐	☐	☐	☐	☐	☐
E. I was sick because of drinking (nausea, vomiting, severe headaches, etc.)	☐	☐	☐	☐	☐	☐	☐
F. I stayed drunk for more than one day at a time	☐	☐	☐	☐	☐	☐	☐
G. I took a drink the first thing when I got up	☐	☐	☐	☐	☐	☐	☐
H. I had the "shakes" because of drinking	☐	☐	☐	☐	☐	☐	☐
I. I skipped three or more regular meals while I was drinking steadily	☐	☐	☐	☐	☐	☐	☐
J. I got into a fight where I hit someone when I was drinking	☐	☐	☐	☐	☐	☐	☐
K. I became drunk without planning to	☐	☐	☐	☐	☐	☐	☐

49. Here are some statements about things that happen to people. How many times in the past 12 months did each of the following happen to you?

(Mark one circle on each line)

	NUMBER OF TIMES EVENT HAPPENED IN PAST 12 MONTHS					
	7 or More	4-6	3	2	1	Never
A. I had an illness connected with my drinking that kept me from duty for a week or longer	☐	☐	☐	☐	☐	☐
B. I didn't get promoted because of my drinking	☐	☐	☐	☐	☐	☐
C. I got a lower score on my efficiency report or performance rating because of my drinking	☐	☐	☐	☐	☐	☐
D. I received UCMJ punishment (Court Martial, Article 15, Captain's Mast, Office Hours) because of my drinking	☐	☐	☐	☐	☐	☐
E. I was arrested for driving under the influence of alcohol	☐	☐	☐	☐	☐	☐
F. I was arrested for a drinking incident not related to driving	☐	☐	☐	☐	☐	☐
G. I spent time in jail, stockade, or brig because of my drinking	☐	☐	☐	☐	☐	☐
H. I was hurt in any kind of accident caused by my drinking	☐	☐	☐	☐	☐	☐
I. My drinking caused an accident where someone else was hurt or property was damaged	☐	☐	☐	☐	☐	☐
J. I hit my mate or the person I date because of my drinking	☐	☐	☐	☐	☐	☐
K. I hit my children because of my drinking	☐	☐	☐	☐	☐	☐
L. I got into a fight where I hit someone other than my family when I was drinking	☐	☐	☐	☐	☐	☐
M. My wife or husband threatened to leave me because of my drinking	☐	☐	☐	☐	☐	☐
N. My wife or husband left me because of my drinking	☐	☐	☐	☐	☐	☐
O. I had to be detoxified because of my drinking	☐	☐	☐	☐	☐	☐

44. The following list includes some of the reasons people give for drinking beer, wine, or hard liquor. IF YOU DRINK, please tell us how important each reason is for your drinking. IF YOU DO NOT DRINK, please tell us how important you think each reason would be if you decided to start drinking.

(Mark one circle on each line)

	Very Important	Fairly Important	Slightly Important	Not at all Important
A To be friendly or social	☐	☐	☐	☐
B To forget my worries	☐	☐	☐	☐
C To relax	☐	☐	☐	☐
D To help cheer me up when I am in a bad mood	☐	☐	☐	☐
E To help me when I am depressed or nervous	☐	☐	☐	☐
F To help me when I am bored and have nothing to do	☐	☐	☐	☐
G To increase my self-confidence	☐	☐	☐	☐

45. Listed below are some of the places where people drink beer, wine, and hard liquor. How often do you drink in each of the following places?

(Mark one circle on each line)

	About Every Day	5-6 Days a Week	3-4 Days a Week	1-2 Days a Week	1-3 Days a Month	Less Often than Monthly	Never
A My quarters or place of residence (including ships)	☐	☐	☐	☐	☐	☐	☐
B Enlisted, NCO, or officers' club	☐	☐	☐	☐	☐	☐	☐
C On-base quarters of friends	☐	☐	☐	☐	☐	☐	☐
D Off-base homes or residences of friends	☐	☐	☐	☐	☐	☐	☐
E Civilian bar, tavern, nightclub, or lounge	☐	☐	☐	☐	☐	☐	☐
F Driving around or sitting in a car	☐	☐	☐	☐	☐	☐	☐
G Out in the open, like at a sports event or picnic	☐	☐	☐	☐	☐	☐	☐

46. Listed below are some of the companions with whom people drink alcohol. How often do you drink with each of the following types of companions (regardless of whether or not they drink too)?

(Mark one circle on each line)

	About Every Day	5-6 Days a Week	3-4 Days a Week	1-2 Days a Week	1-3 Days a Month	Less Often than Monthly	Never
A With my mate or the person I date	☐	☐	☐	☐	☐	☐	☐
B Alone when no one else is around	☐	☐	☐	☐	☐	☐	☐
C With close friends, military only	☐	☐	☐	☐	☐	☐	☐
D With close friends, including civilians	☐	☐	☐	☐	☐	☐	☐
E With co-workers	☐	☐	☐	☐	☐	☐	☐
F With only acquaintances or strangers	☐	☐	☐	☐	☐	☐	☐

47. The following statements describe some things connected with drinking that affect people on their working days. Please indicate on how many working days in the past 12 months these things ever happened to you.

(Mark one circle on each line)

	NUMBER OF WORK DAYS EVENT HAPPENED IN PAST 12 MONTHS								
	40 or More	21- 39	12- 20	7-11	4-6	3	2	1	None
A I worked below my normal level of performance because of drinking, a hangover, or an illness caused by drinking	☐	☐	☐	☐	☐	☐	☐	☐	☐
B I was late for work or left work early because of drinking, a hangover, or an illness caused by drinking	☐	☐	☐	☐	☐	☐	☐	☐	☐
C I did not come to work at all because of a hangover, an illness, or a personal accident caused by drinking	☐	☐	☐	☐	☐	☐	☐	☐	☐
D I was hurt in an on-the-job accident because of my drinking	☐	☐	☐	☐	☐	☐	☐	☐	☐
E I was drunk or "high" while working because of drinking	☐	☐	☐	☐	☐	☐	☐	☐	☐
F I was called in during off-duty hours and reported while drunk or "high" from drinking	☐	☐	☐	☐	☐	☐	☐	☐	☐

To answer the next questions, count any kind of beverage containing alcohol as a "drink." For example, a beer after work, a mixed drink before dinner, and two glasses of wine with dinner, would be considered "4 drinks." Four bottles of beer would also count as "4 drinks."

- 1 "drink" of beer is equivalent to a standard 12-ounce can, bottle, mug, or glass.
- 1 "drink" of wine is equivalent to a 4-ounce wineglass.
- 1 "drink" of hard liquor is equivalent to a 1½-ounce "jigger" (straight or mixed in an average bar drink).

38. During the past 12 months, about how often did you have only 1 or 2 "drinks" containing alcohol in a single day?

- ☐ 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
- ☐ 7-11 days in the past 12 months
- ☐ 3-6 days in the past 12 months
- ☐ Once or twice in the past 12 months
- ☐ Never in the past 12 months

39. During the past 12 months, about how often did you have at least 3 but not more than 4 "drinks" containing alcohol in a single day?

- ☐ 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
- ☐ 7-11 days in the past 12 months
- ☐ 3-6 days in the past 12 months
- ☐ Once or twice in the past 12 months
- ☐ Never in the past 12 months

40. During the past 12 months, about how often did you have at least 5 but not more than 7 "drinks" containing alcohol in a single day?

- ☐ 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
- ☐ 7-11 days in the past 12 months
- ☐ 3-6 days in the past 12 months
- ☐ Once or twice in the past 12 months
- ☐ Never in the past 12 months

41. During the past 12 months, about how often did you have at least 8 but not more than 11 "drinks" containing alcohol in a single day?

- ☐ 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
- ☐ 7-11 days in the past 12 months
- ☐ 3-6 days in the past 12 months
- ☐ Once or twice in the past 12 months
- ☐ Never in the past 12 months

42. During the past 12 months, about how often did you have at least 12 "drinks" containing alcohol in a single day?

- ☐ 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
- ☐ 7-11 days in the past 12 months
- ☐ 3-6 days in the past 12 months
- ☐ Once or twice in the past 12 months
- ☐ Never in the past 12 months

43. Now think about the single day during the past 12 months when you drank the most, counting all types of alcohol (beer, wine, and hard liquor) combined. How many "drinks" did you have on the single day when you drank the most?

- ☐ 18 or more drinks
- ☐ 16 or 17 drinks
- ☐ 14 or 15 drinks
- ☐ 12 or 13 drinks
- ☐ 10 or 11 drinks
- ☐ 8 or 9 drinks
- ☐ 6 or 7 drinks
- ☐ 5 drinks
- ☐ 4 drinks
- ☐ 3 drinks
- ☐ 2 drinks
- ☐ 1 drink
- ☐ Didn't drink any alcohol in the past 12 months

The next six questions concern alcoholic beverages of all kinds, without regard to whether they are beer, wine, or hard liquor. In these questions, a "drink" includes beer, wine, or hard liquor, or any combination of the three.

The term work day, as used in this questionnaire, refers to days when you worked at your duty station or were on quick-response (30 minutes or less) call.

29. Think about the days you worked during the past 30 days. How often did you have a drink two hours or less before going to work?

Every work day
Most work days
About half of my work days
Several work days
One or two work days
Never in the past 30 days

30. On work days during the past 30 days, how often did you have a drink during your lunch break?

Answer for the main meal that occurred during your usual duty hours.

Every work day
Most work days
About half of my work days
Several work days
One or two work days
Never in the past 30 days

31. On work days during the past 30 days, how often did you have a drink during a work break?

Every work day
Most work days
About half of my work days
Several work days
One or two work days
Never in the past 30 days

32. During the past 30 days, how often did you have a drink while working?

Every work day
Most work days
About half of my work days
Several work days
One or two work days
Never in the past 30 days

33. On work days during the past 30 days, how often did you have a drink within two hours after leaving work?

Every work day
Most work days
About half of my work days
Several work days
One or two work days
Never in the past 30 days

34. Now, think about the days you did not work during the past 30 days (weekends, leave days, on pass or liberty). How often did you have a drink on days when you were off duty all day?

Every non-working day
Most non-working days
About half of my non-working days
Several non-working days
One or two non-working days
Never in the past 30 days

NOW THINK ABOUT YOUR USE OF BEER, WINE, OR HARD LIQUOR OVER THE PAST 12 MONTHS.

The next three questions ask about beer, wine, and hard liquor separately. Select the one answer that best describes your drinking during the past 12 months — that is, since this time last year.

35. During the past 12 months, how often did you drink 8 or more cans, bottles, or glasses of beer (3 quarts or more) in a single day?

☐ 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
☐ 7-11 days in the past 12 months
☐ 3-6 days in the past 12 months
☐ Once or twice in the past 12 months
☐ Never in the past 12 months

36. During the past 12 months, how often did you drink 8 or more glasses of wine (more than a fifth) in a single day?

☐ 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
☐ 7-11 days in the past 12 months
☐ 3-6 days in the past 12 months
☐ Once or twice in the past 12 months
☐ Never in the past 12 months

37. During the past 12 months, how often did you drink 8 or more drinks of hard liquor (a half-pint or more) in a single day?

☐ 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
☐ 7-11 days in the past 12 months
☐ 3-6 days in the past 12 months
☐ Once or twice in the past 12 months
☐ Never in the past 12 months

20. 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, average)
- ☐ 11-19 days (3-4 days a week, average)
- ☐ 4-10 days (1-2 days a week, average)
- ☐ 2-3 days in the past 30 days
- ☐ Once in the past 30 days
- ☐ Didn't drink any beer in the past 30 days

21. 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.)

- ☐ Standard 12-ounce can, bottle, or mug
- ☐ 16-ounce ("tall boy") can, bottle, or mug (½ liter)
- ☐ 8-ounce can, bottle, or glass
- ☐ Some other size
- ☐ Didn't drink any beer in the past 30 days

22. Think about the days when you drank beer in the past 30 days. How much beer 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
- ☐ 8 beers
- ☐ 7 beers
- ☐ 6 beers
- ☐ 5 beers
- ☐ 4 beers
- ☐ 3 beers
- ☐ 2 beers
- ☐ 1 beer
- ☐ Didn't drink any beer in the past 30 days

23. 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, average)
- ☐ 11-19 days (3-4 days a week, average)
- ☐ 4-10 days (1-2 days a week, average)
- ☐ 2-3 days in the past 30 days
- ☐ Once in the past 30 days
- ☐ Didn't drink any wine in the past 30 days

24. During the past 30 days, did you usually drink a regular wine or a fortified wine?

Regular wine (also called "table" or "dinner" wine)
Fortified wine (like sherry, port, vermouth, brandy, Dubonnet, champagne, etc.)

Didn't drink any wine in the past 30 days

25. 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 a fifth.)

- ☐ 12 or more wineglasses (2 bottles or more)
- ☐ 9-11 wineglasses
- ☐ 8 wineglasses
- ☐ 7 wineglasses
- ☐ 6 wineglasses (about 1 bottle)
- ☐ 5 wineglasses
- ☐ 4 wineglasses
- ☐ 3 wineglasses (about ½ bottle)
- ☐ 2 wineglasses
- ☐ 1 wineglass
- ☐ Didn't drink any wine in the past 30 days

26. During the past 30 days, on how many days did you drink hard liquor?

- ☐ 28-30 days (about every day)
- ☐ 20-27 days (5-6 days a week, average)
- ☐ 11-19 days (3-4 days a week, average)
- ☐ 4-10 days (1-2 days a week, average)
- ☐ 2-3 days in the past 30 days
- ☐ Once in the past 30 days
- ☐ Didn't drink any hard liquor in the past 30 days

27. During the past 30 days, about how many ounces of hard liquor did you usually have in your average drink?

(The average bar drink, mixed or straight, contains a "jigger" or 1½ ounces of hard liquor.)

- ☐ 5 or more ounces
- ☐ 4 ounces
- ☐ 3 ounces (a "double")
- ☐ 2 ounces
- ☐ 1½ ounces (a "jigger")
- ☐ 1 ounce (a "shot")
- ☐ Didn't drink any hard liquor in the past 30 days

28. Think about the days when you drank hard liquor in the past 30 days. How much hard liquor did you usually drink on a typical day when you drank hard liquor?

- ☐ 18 or more drinks
- ☐ 15-17 drinks
- ☐ 12-14 drinks
- ☐ 9-11 drinks
- ☐ 8 drinks
- ☐ 7 drinks
- ☐ 6 drinks
- ☐ 5 drinks
- ☐ 4 drinks
- ☐ 3 drinks
- ☐ 2 drinks
- ☐ 1 drink
- ☐ Didn't drink any hard liquor in the past 30 days

17. Taking all things together, how satisfied or dissatisfied are you with the military as a way of life? Mark the number which shows your opinion on the line below. For example, people who are Very Satisfied with the military as a way of life would mark "7". Others who are Very Dissatisfied with the military as a way of life would mark "1". Some other people may have opinions somewhere between 1 and 7. Mark one number on the line below to show your opinion.

How satisfied or dissatisfied are you with the military as a way of life?

Very
Dissatisfied

Very
Satisfied

① — ② — ③ — ④ — ⑤ — ⑥ — ⑦

18. Here are some statements about things that happen to people. How many times in the past 12 months did each of the following happen to you?

NUMBER OF TIMES EVENT HAPPENED
IN PAST 12 MONTHS

(Mark one circle on each line)

	7 or More	4-6	3	2	1	Never
A. I had an illness that kept me from duty for a week or longer	☐	☐	☐	☐	☐	☐
B. I didn't get promoted when I thought I should have been	☐	☐	☐	☐	☐	☐
C. I got a lower score on my efficiency report or performance rating than I expected	☐	☐	☐	☐	☐	☐
D. I received UCMJ punishment (Court Martial, Article 15, Captain's Mast, Office Hours)	☐	☐	☐	☐	☐	☐
E. I was arrested for a driving violation	☐	☐	☐	☐	☐	☐
F. I was arrested for an incident not related to driving	☐	☐	☐	☐	☐	☐
G. I spent time in jail, stockade, or brig	☐	☐	☐	☐	☐	☐
H. I was hurt in an accident (any kind)	☐	☐	☐	☐	☐	☐
I. I caused an accident where someone else was hurt or property was damaged	☐	☐	☐	☐	☐	☐
J. I hit my mate or the person I date	☐	☐	☐	☐	☐	☐
K. I hit my child(ren) for a reason other than discipline (spanking)	☐	☐	☐	☐	☐	☐
L. I got into a fight where I hit someone other than my family	☐	☐	☐	☐	☐	☐
M. My wife or husband threatened to leave me	☐	☐	☐	☐	☐	☐
N. My wife or husband left me	☐	☐	☐	☐	☐	☐

19. Please indicate how much you agree or disagree with each of the following statements.

(Mark one circle on each line)

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know/No Opinion
A. I'm lonesome most of the time when I'm off-duty	☐	☐	☐	☐	☐
B. My living quarters are depressing	☐	☐	☐	☐	☐
C. My religion helps me make everyday decisions	☐	☐	☐	☐	☐
D. My job keeps me tense and nervous	☐	☐	☐	☐	☐
E. Most of the time I'm bored when I'm on duty	☐	☐	☐	☐	☐
F. The morale of the personnel in my unit (or ship) is high	☐	☐	☐	☐	☐
G. All in all I'm satisfied with my work assignment	☐	☐	☐	☐	☐
H. My unit (or ship) would be able to perform its wartime mission well	☐	☐	☐	☐	☐
I. My supervisor praises good work	☐	☐	☐	☐	☐
J. I enjoy working with the Service personnel in my unit	☐	☐	☐	☐	☐

The next group of questions is about past and current use of alcoholic beverages — that is, beer, wine, and hard liquor. Please take your time on these questions and answer each one as accurately as possible. If the answers provided look more exact than you can remember, mark your best estimate. If you can't decide between two answer choices because you drink different amounts at different times, answer for the time you drank the most.

11. Follow the instructions below for your Service. Examples of how to complete this section are shown on the back cover of this booklet

ARMY: ENLISTED/WARRANTS: Record the first four entries of your current Primary MOS. See Example 2 or 3
COMM. OFFICERS: Record the four numbers of your Primary and Secondary MOS's. See Example 1.

NAVY: UNDESIGNATED STRIKERS: Record the two letters of your Rating (apprenticeship group) in Boxes 3 and 4, enter plus signs ("++") in Boxes 1 and 2. See Example 4.

ALL OTHER ENLISTED: Record all characters of your current Primary Rating so that the last character is entered in Box 4; enter a plus sign ("++") in any unused box. See Examples 5 and 6

OFFICERS: Record all four numbers of your current Primary Designator. See Example 1.

MARINE CORPS: Record all four numbers of your current Primary MOS. See Example 1.

AIR FORCE: Record the first four numbers of your current Primary AFSC — DO NOT USE LETTERS. See Example 1.

My current Primary MOS/Rating/Designator/AFSC is:

ALL SERVICES: Use all four boxes, one character to a box. Write ONE number or letter (or "++") in each box. Then, mark the matching circle below each box. Please check the example(s) for your Service on the back cover of this booklet.

☐ I don't know my current Primary/MOS/Rating/Designator/AFSC.

BOX 1	BOX 2	BOX 3	BOX 4
(A) (N) (0)	(A) (N) (0)	(A) (N) (0)	(A) (N) (0)
(B) (O) (1)	(B) (O) (1)	(B) (O) (1)	(B) (O) (1)
(C) (P) (2)	(C) (P) (2)	(C) (P) (2)	(C) (P) (2)
(D) (Q) (3)	(D) (Q) (3)	(D) (Q) (3)	(D) (Q) (3)
(E) (R) (4)	(E) (R) (4)	(E) (R) (4)	(E) (R) (4)
(F) (S) (5)	(F) (S) (5)	(F) (S) (5)	(F) (S) (5)
(G) (T) (6)	(G) (T) (6)	(G) (T) (6)	(G) (T) (6)
(H) (U) (7)	(H) (U) (7)	(H) (U) (7)	(H) (U) (7)
(I) (V) (8)	(I) (V) (8)	(I) (V) (8)	(I) (V) (8)
(J) (W) (9)	(J) (W) (9)	(J) (W) (9)	(J) (W) (9)
(K) (X)	(K) (X)	(K) (X)	(K) (X)
(L) (Y) (+)	(L) (Y) (+)	(L) (Y) (+)	(L) (Y) (+)
(M) (Z)	(M) (Z)	(M) (Z)	(M) (Z)

12. During the past 30 days, how much of the time did you work in jobs outside your current primary MOS/rating/designator/AFSC?

- ☐ All of the time
☐ Most of the time
☐ About half of the time
☐ Some, but less than half of the time
☐ None of the time

13. What is your marital status?

- ☐ Married or living as married
☐ Separated
☐ Divorced
☐ Widowed
☐ Single, never married and not living as married

14. Is your wife/husband/mate now living with you at your present duty location?

- ☐ Yes
☐ No
☐ I have no wife/husband/mate

15. In your present duty assignment, are you authorized to have your dependents accompany you and live with you?

- ☐ Yes
☐ No
☐ I have no dependents

16. Complete the table below for your dependents. Do NOT include your wife/husband/mate as a dependent.

• If NO DEPENDENTS, MARK HERE → (○). GO TO QUESTION 17.

- Use one line of the table for each dependent.
 • If more than five dependents, complete the table for the five YOUNGEST.

- A. Indicate in part A the age of each dependent
 B. After you have marked the age, indicate in part B whether or not that dependent lives with you
 Dependents away at college should be marked as NOT living with you.

DEP. NO.	A. HOW OLD WAS DEPENDENT (IN YEARS) ON LAST BIRTHDAY?								B. DOES DEP LIVE WITH YOU?	
	Less Than 1	1-3	4-6	7-10	11-14	15-18	19+		Yes	No
1										
2										
3										
4										
5										

1. What Service are you in?

Army
Navy
Marine Corps
Air Force

2. What is your pay grade?

ENLISTED

E-1
E-2
E-3
E-4
E-5
E-6
E7-E9

OFFICER

☐ Trainee
☐ W1-W4
☐ O-1
☐ O-2
☐ O-3
☐ O4-O6

3. How old were you on your last birthday?

Use both columns. Write ONE number in each box. Then, mark the matching circle below each box.

AGE

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

4. How many people do you supervise most of the time?

None
5
6-10
11-15
16-20
More than 20

5. As of today, how many months have you been assigned to your present permanent post, base, ship, or duty station?

Include any extension of your present tour. Do not count previous tours at this duty station.

1 month or less
2-3 months
4-6 months
7-12 months
13-18 months
19-24 months
25-36 months
More than 3 years

6. Are you currently assigned to a ship as your permanent duty station?

☐ Yes
☐ No

7. During the past 30 days, how many days were you on official leave?

Do not include overnight pass, 3-day pass, shore leave, or liberty.

Use both columns. Write ONE number in each box. Then, mark the matching circle below each box. For example, 5 days would be marked "05." If "none," record "00."

DAYS

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

8. During the past 30 days, how many full 24-hour days were you deployed at sea or in the field?

Use both columns. Write ONE number in each box. Then, mark the matching circle below each box. If "none," record "00."

DAYS

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

9. When was the last time you were deployed at sea or in the field for 24 hours or more?

☐ Never deployed at sea or in the field
☐ 1-7 days ago
☐ 8-14 days ago
☐ 2-4 weeks ago
☐ 5-8 weeks ago
☐ 2-3 months ago
☐ 4-6 months ago
☐ 7-12 months ago
☐ More than one year ago

10. In what type of housing do you currently live?

If your dependents are with you, mark type of family housing.

☐ Civilian housing
☐ On board ship
☐ Military barracks, dormitory or bachelor quarters
☐ On-base military family housing
☐ Off-base military family housing

77. Please indicate how much you agree or disagree with each of the following statements.

(Mark one circle on each line)

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know/No Opinion
A The personnel at this installation sincerely try to help people who have a drug problem	☐	☐	☐	☐	☐
B There are some times at work when I need an "upper"	☐	☐	☐	☐	☐
C Most of my friends use drugs, at least marijuana	☐	☐	☐	☐	☐
D Using drugs might mess up my mind	☐	☐	☐	☐	☐
E Persons who try to get treatment for drug problems will later experience surprise searches of themselves, their auto, or their quarters	☐	☐	☐	☐	☐
F The price of drugs around this installation is so low almost anyone can afford them	☐	☐	☐	☐	☐
G My mate or the person I date disapproves of my using drugs	☐	☐	☐	☐	☐
H Persons who want treatment for their drug problems have difficulty getting off duty to attend counseling sessions	☐	☐	☐	☐	☐
I Using drugs is just about the only recreation available at this installation	☐	☐	☐	☐	☐
J Using drugs might interfere with my work	☐	☐	☐	☐	☐
K There is no way to get help for a drug problem without one's commander finding out	☐	☐	☐	☐	☐
L At parties and social functions at this installation, it's easy to get away with using drugs	☐	☐	☐	☐	☐
M Using drugs costs too much	☐	☐	☐	☐	☐
N There's always a party somewhere where drugs are being used	☐	☐	☐	☐	☐
O There's little danger of becoming addicted to most street drugs	☐	☐	☐	☐	☐
P Using drugs might interfere with my health or physical fitness	☐	☐	☐	☐	☐
Q Disciplinary action will be taken against any person identified as having a drug problem, even if no drugs are found	☐	☐	☐	☐	☐
R Using drugs on-base at this installation is a sure way to get caught	☐	☐	☐	☐	☐
S The military's drug education program has helped me make better decisions about using drugs for non-medical purposes	☐	☐	☐	☐	☐
T Non-medical use of drugs is against my religious beliefs	☐	☐	☐	☐	☐
U Seeking help for a drug problem will damage one's military career	☐	☐	☐	☐	☐
V I might use (more) marijuana if it were easier to get	☐	☐	☐	☐	☐
W There are some times at work when I need a tranquilizer or "downer"	☐	☐	☐	☐	☐

78. During the past 12 months, how much of a problem has using drugs been to you?

- ☐ Quite a serious problem
☐ A considerable problem
☐ A mild problem
☐ No problem at all

79. Do you need help now for a problem related to your drug use?

- ☐ Yes
☐ No
☐ Don't know

80. Do any of your dependents need help for a drug problem?

- ☐ I don't have any dependents
☐ Yes, some help is needed
☐ No help is needed
☐ Don't know

81. Do any of your friends or acquaintances in the military need help for a drug problem?

- ☐ Yes, some help is needed
☐ No help is needed
☐ Don't know

82. Are you now using drugs more, about the same, or less than you did before you entered the Service?

- ☐ Use drugs more now
☐ Use drugs about the same
☐ Use drugs less now
☐ Did not use drugs before entering the Service and do not use drugs now

83. Are you now using drugs more, about the same, or less than you did before you came to this installation?

- ☐ Use drugs more at this installation
☐ Use drugs about the same
☐ Use drugs less at this installation
☐ Did not use drugs before coming to this installation and do not use drugs now

84. Since entering the Service, have you ever had professional counseling or treatment or joined a group to get help for a drug problem?

- ☐ Yes
☐ No

85. When did you meet with a group or get professional help for a drug problem the last time (since entering the Service)?

- ☐ Within the past 30 days
☐ Within the past year but not in the past 30 days
☐ Over one year ago
☐ Haven't gotten help since entering the Service

86. Where did you get help for a drug problem the last time (since entering the Service)?

- ☐ On-base
☐ Off-base
☐ Haven't gotten help since entering the Service

87. Who staffs the program where you got help for a drug problem the last time (since entering the Service)?

- ☐ Military personnel only
☐ Civilian personnel only
☐ Both military and civilian personnel
☐ Haven't gotten help since entering the Service

88. What type of treatment or help did you get for a drug problem the last time (since entering the Service)?

- ☐ Residential (overnight stay) detoxification or rehabilitation
☐ Nonresidential counseling (no overnight stay)
☐ Both detoxification and counseling programs
☐ Other
☐ Haven't gotten help since entering the Service

89. How much did your experience with the last program (since entering the Service) help you with your drug problem?

- ☐ Helped very much
☐ Helped some
☐ Didn't help at all
☐ Haven't gotten help since entering the Service

90. Are you now using drugs more, about the same, or less than you did before you got help the last time (since entering the Service)?

- ☐ Don't use drugs at all since I got help
☐ Use drugs less now
☐ Use drugs about the same as before I had help
☐ Use drugs more now
☐ Haven't gotten help since entering the Service

91. The last time you got help or treatment for a drug problem (since entering the Service), did you arrange to get it in the following ways?

(Mark one circle on each line)

	Yes	No	Haven't Gotten Help
A. On your own without any help or advice	☐	☐	☐
B. On the recommendation of a friend, family member, clergyman, or doctor	☐	☐	☐
C. Through military unit or assistance agency, education program, referral office, or drug counselor	☐	☐	☐
D. As a result of an order from your commander	☐	☐	☐
E. As a result of a military justice proceeding	☐	☐	☐
F. Through civilian assistance agency, education program, referral office, or drug counselor	☐	☐	☐

92. Which term best describes your use of marijuana or hashish during the last six months?

- ☐ Never
☐ Rarely
☐ Sometimes
☐ Frequently

93. Which term best describes your use of "hard drugs" such as heroin, LSD, etc., during the last six months?

- ☐ Never
☐ Rarely
☐ Sometimes
☐ Frequently

94. Are the following services available on-base at this installation?

(Mark one circle on each line)

	Yes	No	Don't Know
A. Drug education or information program (classes, an office, printed material)	☐	☐	☐
B. Drug counseling program	☐	☐	☐
C. Drug referral office	☐	☐	☐
D. Drug detoxification program	☐	☐	☐

95. When was the first time you used each of the drugs listed below for non-medical purposes?

	FIRST USED THIS DRUG					
	Today	In the Past 30 Days	2-6 Months Ago	7-12 Months Ago	More Than One Year Ago	Never Used
(Mark one circle on each line)						
A Marijuana or hashish	☐	☐	☐	☐	☐	☐
B PCP	☐	☐	☐	☐	☐	☐
C LSD or other hallucinogens	☐	☐	☐	☐	☐	☐
D Cocaine	☐	☐	☐	☐	☐	☐
E Amphetamines or other stimulants	☐	☐	☐	☐	☐	☐
F Tranquilizers	☐	☐	☐	☐	☐	☐
G Barbiturates or other sedatives	☐	☐	☐	☐	☐	☐
H Heroin	☐	☐	☐	☐	☐	☐
I Other opiates	☐	☐	☐	☐	☐	☐
J Other drugs	☐	☐	☐	☐	☐	☐

96. When did you last use each type of drug listed below for non-medical purposes?

	LAST USED THIS DRUG							
	Today	During the Past 30 Days	5-8 Weeks Ago	2-3 Months Ago	4-6 Months Ago	7-12 Months Ago	More Than One Year Ago	Never Used
(Mark one circle on each line)								
A Marijuana or hashish	☐	☐	☐	☐	☐	☐	☐	☐
B PCP	☐	☐	☐	☐	☐	☐	☐	☐
C LSD or other hallucinogens	☐	☐	☐	☐	☐	☐	☐	☐
D Cocaine	☐	☐	☐	☐	☐	☐	☐	☐
E Amphetamines or other stimulants	☐	☐	☐	☐	☐	☐	☐	☐
F Tranquilizers	☐	☐	☐	☐	☐	☐	☐	☐
G Barbiturates or other sedatives	☐	☐	☐	☐	☐	☐	☐	☐
H Heroin	☐	☐	☐	☐	☐	☐	☐	☐
I Other opiates	☐	☐	☐	☐	☐	☐	☐	☐
J Other drugs	☐	☐	☐	☐	☐	☐	☐	☐

97. During the past 12 months, have you attended each of the following military programs?

	Yes	No
(Mark one circle on each line)		
A Classes on general alcohol education	☐	☐
B Classes on general drug education	☐	☐
C Supervisor training for alcohol problems	☐	☐
D Supervisor training for drug problems	☐	☐

98. In the past 12 months, how many days were you a bed patient in a hospital for each of the following reasons?

	DAYS IN HOSPITAL DURING PAST 12 MONTHS								
	40 or More	21-39	12-20	7-11	4-6	3	2	1	None
(Mark one circle on each line)									
A Days hospitalized in connection with drinking	☐	☐	☐	☐	☐	☐	☐	☐	☐
B Days hospitalized in connection with use of drugs	☐	☐	☐	☐	☐	☐	☐	☐	☐
C Days hospitalized but not in connection with drinking or use of drugs	☐	☐	☐	☐	☐	☐	☐	☐	☐

99. In the past 12 months, how many times did you visit a doctor (as an outpatient) for each of the following reasons?

	VISITS TO A DOCTOR DURING PAST 12 MONTHS								
	40 or More	21-39	12-20	7-11	4-6	3	2	1	None
(Mark one circle on each line)									
A Visited doctor in connection with drinking problem	☐	☐	☐	☐	☐	☐	☐	☐	☐
B Visited doctor in connection with drug problem	☐	☐	☐	☐	☐	☐	☐	☐	☐
C Visited doctor but not in connection with drinking or drug problem	☐	☐	☐	☐	☐	☐	☐	☐	☐

100 The following list includes some ways that religion is important to people in daily life. Please indicate how important each item is to you in your daily life.

(Mark one circle on each line)

Very Important	Fairly Important	Slightly Important	Not at All Important

A. To join and participate in religious programs	☐	☐	☐	☐
B. To rely on religious counsel or teaching when I have a problem	☐	☐	☐	☐
C. To believe in God	☐	☐	☐	☐
D. To turn to prayer when I'm facing a personal problem	☐	☐	☐	☐
E. To attend religious services regularly	☐	☐	☐	☐

101. Do you have a religious preference?

- ☐ Yes
☐ No

102. How often have you attended religious services in the past 12 months?

- ☐ 2-3 days a week or more
☐ Once a week
☐ 2-3 days a month
☐ About once a month
☐ 7-11 days in the past 12 months
☐ 3-6 days in the past 12 months
☐ Once or twice in the past 12 months
☐ Never in the past 12 months

103. During the past 30 days, how many packs of cigarettes did you usually smoke during a typical day?

- ☐ 3 or more packs
☐ 2 or more, but less than 3 packs
☐ 1 or more, but less than 2 packs
☐ Less than 1 pack, but smoked some
☐ Did not smoke in the past 30 days

104. Are you male or female?

- ☐ Male
☐ Female

105. What do you consider to be your main racial group?

- ☐ White
☐ Black
☐ Other

106. Are you of Hispanic origin (Chicano, Mexican, Puerto Rican, Cuban, Latin)?

- ☐ Yes
☐ No

107. What is your highest level of education now?

- ☐ Did not graduate from high school
☐ GED high school graduate equivalent
☐ High school graduate
☐ 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

108. How long have you been on active duty?

If you had a break in Service, count current time and time in previous tours, but not time during the break in Service.

- ☐ 6 months or less
☐ 7-12 months
☐ 13-18 months
☐ 19-24 months
☐ 25-36 months
☐ 37-48 months
☐ 4 to 9 years
☐ 10 to 19 years
☐ 20 or more years

109. Do you plan to remain in the Service when your present term, enlistment, or commitment is up?

- ☐ Yes
☐ Probably yes
☐ Probably no
☐ No
☐ Don't know, not sure
☐ Doesn't apply to me. I have an indefinite obligation

THANK YOU VERY MUCH FOR YOUR TIME, EFFORT, AND COOPERATION
IN COMPLETING THIS QUESTIONNAIRE.

PLEASE CHECK OUT AND PLACE THE QUESTIONNAIRE
IN THE BOX AS YOU LEAVE THE ROOM.

EXAMPLES OF HOW TO COMPLETE QUESTION 11

1

ARMY — Commissioned Officers only.
NAVY — Commissioned Officers only.
MARINES — All
AIR FORCE — All. (Note: AFSC AO3697C
 would be marked "0369")

BOX 1	BOX 2	BOX 3	BOX 4
0	3	6	9

4

NAVY — Undesignated Strikers only.

BOX 1	BOX 2	BOX 3	BOX 4
+	+	S	N

2

ARMY — Enlisted only.

BOX 1	BOX 2	BOX 3	BOX 4
1	1	B	2

5

NAVY — Enlisted, except non-designated.
 (Also see Example 6.)

BOX 1	BOX 2	BOX 3	BOX 4
G	M	M	3

3

ARMY — Warrant Officers only

BOX 1	BOX 2	BOX 3	BOX 4
2	2	3	A

6

NAVY — Enlisted, except non-designated.
 (Also see Example 5.)

BOX 1	BOX 2	BOX 3	BOX 4
+	M	S	2

Appendix B

Estimated Sampling Errors

ESTIMATED SAMPLING ERRORS

The procedures and methodology described here are presented to help the reader use the estimates of sampling errors that have been calculated and printed for various proportions and means in this report and to enable the reader to estimate sampling errors for those proportions and means for which standard errors do not appear in parentheses in the tables. "Sampling errors" is the general term used to describe all the sources of difference between an estimate based on a sample and the true value for the population. The difference arises because observations are made only on a sample rather than on every member of the population, as in a census. There are about two million officers and enlisted personnel in the four military services on duty worldwide. Samples of 22,000 such military personnel clustered in 58 central installations can provide close, but less than perfect, estimates of the responses that would have been obtained had all officers and enlisted personnel been asked to complete the alcohol and drug use questionnaire.

A. Confidence Intervals and Significant Differences

For any particular percentage resulting from a sampling survey, it is not possible to know the exact amount of error that has resulted from sampling. It is possible, however, to establish estimated "confidence intervals"--ranges which are very likely to include the true population value. For example, Table 4.3 shows that 84.4 percent of the military personnel in the 1982 sample reported having consumed beverage alcohol at least once in the past 30 days with a standard error of .9 percent. It is possible to set up a 95 percent confidence interval, which means that 95 percent of the time a computed interval can be expected to include the true (population) percentage. As a general rule the 95 percent confidence interval is formed by doubling the standard error (multiplying by 1.96 is the precise value to use) and then adding this result to the estimate to form the upper bound and subtracting this result from the estimate to form the lower bound. In this case the lower and upper limits of the 95 percent interval are 82.6 percent and 86.2 percent. A somewhat wider set of limits can be set up to indicate the 99 percent confidence interval.

It is also possible to construct a confidence interval for a difference between two estimated percentages. For example, the difference between Air Force personnel and all military personnel in the percentages having drunk alcoholic beverages during the past 30 days is estimated to be 1.5 percent (Table 4.3), and the 95 percent confidence limits for that difference have been computed to be ± 2.6 percent of that estimate. In other words, we can be 95 percent certain that the true Air Force percentage is somewhere between 2.6 percent below the true percentage for all military personnel and 2.6 percent above it. Since that range includes zero difference, it can be seen that at the 95 percent level the estimated difference is not significantly different from zero, or just "not significant." If the interval had been from, say ± 0.5 percent, the difference would have been "significant" at the 95 percent level.

B. Factors Influencing the Size of Confidence Intervals in this Report

From a statistical standpoint, the most straightforward types of samples are simple random samples. In such samples the confidence limits for a percentage are simple functions of the percentage value and the size of the sample or subgroup on which it is based. For example, the 95 percent confidence interval for a proportion (p) can be approximated by: $p \pm 1.96 \sqrt{p(1-p)/N}$. In a more complicated sample, such as the one used in this survey, there are other factors also involved in the determination of confidence limits. In this section all of the factors will be discussed, beginning with the basic ones and proceeding to those that are more complex.

1. Number of Cases (N)

When other things are equal, the larger a sample or subgroup the more precise will be an estimate based thereon and, therefore, the narrower the confidence levels. One of the factors is $1/\sqrt{N}$, the square root of the reciprocal of the size of the sample or the subgroup. Thus a sample of 400 will, ceteris paribus, have a confidence interval just half as wide as that for a sample of 100, since $1/\sqrt{400}$ is just half of $1/\sqrt{100}$.

2. Percentage Size

Other things again being equal, percentage values around 50 percent have the largest confidence intervals because $\sqrt{p(1-p)}$ (where p is a proportion between 0.0 and 100.0) is also a factor affecting the size of a confidence interval. This factor will be only three-fifths as large for 10 percent or 90 percent as for 50 percent since $\sqrt{.1 \times .9}$ is $3/5 \times \sqrt{.5 \times .5}$.

C. Design Effects in Complex Samples

Under simple random sampling, a confidence interval can be determined from the two factors just described plus the appropriate constant for the confidence level desired, e.g., 1.96 for 95 percent. Where stratification, clustering and differential weighting of responses are involved, as in this survey, all of these also influence sampling error. Stratification tends to increase precision, but effects of clustering and weighting reduce it, and the result is usually lower precision than would be obtained by the use of a simple random sample of the same size. Accordingly, use of the simple formula would generally underestimate the sampling error involved.

There are methods for correcting for this underestimation, however. Kish (1965, p. 258) has defined a correction term known as the design effect (DEFF) where

$$DEFF = \frac{\text{actual sampling variance}}{p(1-p)/N}$$

If, therefore, the actual sampling variance for a proportion p is four times the value computed for a simple random sample of the same size N , the DEFF is 4.0. Because a confidence interval is based on the square root of the variance, any confidence interval set up would have to be twice as wide as the corresponding interval based on a simple random sample. In order to have the same confidence interval, it would be necessary to have a sample four times as large.

A simple way of using a DEFF value is to divide the actual sample or domain size by it and obtain the "effective N ," the size of a simple random sample that would have resulted in the same degree of precision. For example, with a DEFF of 4.0 and an actual sample size of 4,000, the "effective N " is 1,000. The value of the "effective N " can be used in the simple formula $\sqrt{p(1-p)/N}$ to compute standard errors of estimate and confidence interval limits. It is therefore possible to use formulas and tables appropriate for simple random samples, regardless of the actual type of sample, by converting the sample size to the "effective N ."

Actually, every statistic derived from a complex sample has its own design effect, different from all of the others. In practice, however, DEFF values are generally computed only for a cross-section of the statistics, and averages are computed and applied to those of the same types. Often a single average DEFF is used for all percentages.

In this study, standard errors have been computed for most estimated proportions. These calculations incorporated the appropriate (sub) sample sizes, proportions, and correction for design effects. In tables where standard errors do not appear, a reasonable rule-of-thumb is that the sampling error associated with any point estimate is equal to or slightly larger than the standard error presented with an equal-sized estimated proportion in table cells defined by similar characteristics (e.g., service, pay grade).

Appendix C

Sampling Design

SAMPLING DESIGN

A. Design Parameters

To provide a basis for developing the sampling design, key objectives of the study are identified and described in terms of,

- the population of inferential interest, defined in fully operational terms, and including any domains or subpopulations of major importance,
- the parameters or characteristics describing the population(s) that are of central concern, including, in general, descriptive, comparative and relational parameters, and,
- the precision with which the parameters are required to be estimated.

With reference to the first point, the population of inferential interest to the 1982 Worldwide Survey is defined in terms of,

- all military personnel,
- below pay grade 07,
- who were on active duty status in August or September 1982, and,
- who were still in the military when scheduled for data collection during the period September through December 1982,
- except persons who were absent without leave at the time of data collection.

The sampling design is based on estimating the distribution of marijuana use at worldwide levels, at total Service levels, and at Service by regional levels. The 1980 Worldwide Survey (Burt & Biegel, 1980) provided the marijuana use distribution used to design the 1982 sample. The distribution is shown in Table C.1.

The precision requirements shown in Table C.1 as relative standard errors were specified by DoD, following discussion of design alternatives.

B. First Stage Sampling Design

First stage sampling units were constructed of geographically proximal organizational units defined within each Service. The sampling units were constructed to have a minimum size determined using presurvey expectations of the rate at which sample persons would be available for group session question-

Table C.1. Summary of Sampling Design Parameters

Region	Service	Proportions of E1-E5 personnel using marijuana at least once in the past 30 days (1980 data) ^a	Relative Standard Error of the 1982 sample estimates of the proportions
Americas	Army	0.41	0.04
	Navy	0.48	0.05
	Marine Corps	0.51	0.06
	Air Force	0.21	0.08
	Total	0.39	0.03
North Pacific	Army	0.34	0.07
	Navy	0.31	0.12
	Marine Corps	0.32	0.08
	Air Force	0.15	0.13
	Total	0.28	0.04
Other Pacific	Army	0.42	0.08
	Navy	0.47	0.06
	Marine Corps	0.40	0.09
	Air Force	0.18	0.13
	Total	0.37	0.04
Europe	Army	0.39	0.04
	Navy	0.27	0.20
	Marine Corps	-	-
	Air Force	0.20	0.11
	Total	0.33	0.04
Total Worldwide	Army	0.40	0.03
	Navy	0.47	0.05
	Marine Corps	0.47	0.05
	Air Force	0.20	0.06
	Total	0.37	0.02

^aThe 1980 data are taken from Burt and Biegel (1980), Table II - 3, and Table III-1.

naire administrations. The minimum size of a sampling unit was set at 300 available sample persons. The construction of the first stage units varied in detail according to Service, as described below.

Army: The organizational unit used was the Army Location Code (ARLOC). The geographic identification available for ARLOCs identified the state, if the ARLOC was in the United States, or the country, otherwise.

- All ARLOCs with at least 450 active duty personnel were identified. Any ARLOCs with fewer than 450 persons were combined with the smallest ARLOC containing at least 450 persons in the same state, if located in the United States, or country, otherwise. Any remaining ARLOC's in the state or country formed separate first stage units.
- Any state or country not having at least one ARLOC with at least 450 persons, but having 450 persons or more collectively in smaller ARLOCs, was itself a first stage unit.
- Any state or country with fewer than 450 active duty Army personnel were grouped by inspection with proximal first stage units already constructed, or with proximal states and counties to form first stage units with 450 or more persons.

A total of 213 first stage units were constructed accounting for all but two ARLOCs (listed in Table C.2). Exclusion of the two ARLOCs produced the Army component of the sampling frame that was 99.99% complete in terms of active duty personnel.

Navy: The organizational unit used was the Unit Identification Code (UIC). The geographic identification available for UICs identified home port, county and state, if the UIC is based in the United States, or home port and country, if the UIC is foreign based.

- UICs were first combined by home port. Individual UICs in the home port combinations were classified as either ashore or afloat and the quantity,

$$\text{effective size} = \frac{2}{3} [\text{ashore personnel}] + \frac{1}{4} [\text{afloat personnel}],$$

was computed. Home port combinations with an effective size of at least 300 persons constituted first stage sampling units.

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AMONG MILITARY PERSONNEL: 1982(U) RESEARCH TRIANGLE
INST RESEARCH TRIANGLE PARK NC R M BRAY ET AL. 1983

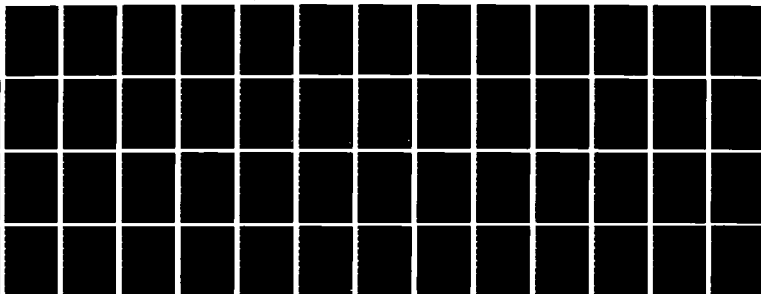
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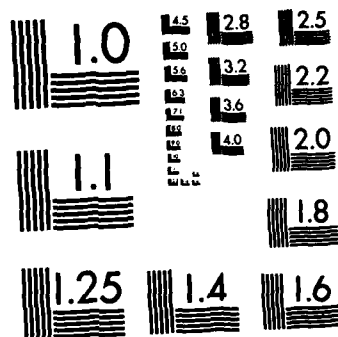
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Table C.2. List of Organizational Units Excluded
From the First Stage Sampling Frame

ARLOC	Army	UIC	Navy	MCC/RUC	Marine Corps
	Personnel		Personnel		Personnel
V6000	75	20975	179	J9B/32009	1
UR588	7	20978	38	K9H/89999	1
		21023	1	W95/9999	38
		21048	13	W99/9999	14
		21052	3		
		21055	1		
		21416	2		
		41104	9		
		42182	105		

- Home port combinations in the United States that failed to meet the minimum effective size criterion were combined with first stage units in the same county. If the county contained no home port combinations that individually satisfied the size criterion (i.e., contained no first stage units), the county itself was considered. If the county level combinations failed to meet the size criterion, further combinations with neighboring counties, all other counties in the same state and with neighboring states were undertaken up to the level required to satisfy the criterion.
- In the case of foreign based home port combinations failing to meet the minimum effective size criterion, further combinations within countries and neighboring countries were undertaken in turn.
- Ten of the first stage units constructed by the above procedure were excessively large in terms of total personnel. These were arbitrarily subdivided into a variable number of first stage units such that each unit had not more than 10,000 active duty Navy personnel.

The Navy component of the first stage frame consisted of 95 first stage units. Nine UICs listed in Table C.2 could not be classified geographically and were excluded. As a result the Navy component of the frame is 99.93% complete in terms of active duty personnel.

Marine Corps: The organizational units used were specified jointly by Monitor Command Codes (MCC's) and Reporting Unit Codes (RUC's).

- Major Marine Corps installations are identified by numeric MCCs in the range 008 through 200. RUCs belonging to these MCCs and sharing a common geographic code were combined to form first stage units. Each of these units contained more than the required minimum of 450 active duty personnel.
- The actual geographic locations (as opposed to geographic codes which identify the locations of central commands) were used to combine the remaining MCCs/RUCs in the United States with first stage units in the same county, adjacent counties, same state or adjacent state, as required. In the case of foreign based MCCs/RUCs, combinations were formed within countries. Embassy and other special detachments were combined using geographic codes and fleet Marines were combined using home ports (of the ship).
- Because of the scattered distribution of small numbers of Marines in the European region, no first stage units were constructed. Instead, MCCs/RUCs in Europe were associated with the nearest Navy first stage unit. A separate first stage Marine Corps sample was not selected from the European Region.

A total of 47 first stage units make up the Marine Corps component of the sampling frame. No geographic or command structure affiliation could be found for the four MCCs/RUCs listed in Table 3.2. Exclusion of these units provides the Marine Corps component of the sampling frame 99.97% complete in terms of active duty personnel.

Air Force: The organizational units used to construct first stage sampling units were Consolidated Base Personnel Offices (CBPOs) at specified geographic locations identified by state or country accordingly as the CBPO is located in the United States or is foreign based. Command code identification is also available for each CBPO and location.

- Any CBPO at a given location with at least 450 active duty personnel constituted a first stage sampling unit.
- CBPOs with fewer than 450 persons were combined within geographic locations and command codes. If the geo-

graphic location did not contain a like command, the combination was formed with any other CBPO having the same location code. If the resulting combination still contained fewer than 450 persons, locations were ignored and combinations formed within CBPO.

- The resulting combinations were inspected. If CBPO by location records were found to be closer geographically to a different first stage unit than the one they were in they were moved to that unit.

A total of 122 first stage units comprised the Air Force component of the sampling frame. All active duty personnel are accounted for in the 122 first stage units constructed.

In total, the first stage frame consisted of 475 sampling units averaging 4,375 active duty personnel. The frame was stratified by broadly defined geographic regions and by Service within region. The allocation of the first stage sample to the strata imposed on the frame is also shown in Table C.3. The allocation was determined jointly by the precision requirements in Table C.1 and the costs of data collection and processing associated with the group session questionnaire administrations in the different geographic regions.

It should perhaps be noted that the geographic regions were constructed more on the basis of cost considerations than geographic principles. Geographers might object, for example, to the placing of Iceland in the Americas and North Africa in Europe.

C. Second Stage Sampling Design

The second stage design is more easily understood if the schedule followed in selecting the sample versus identifying sample persons is first explained. The sample was selected based on personnel counts current in February or March, 1982. Identification of the sample persons selected, on the other hand, took place some seven months later, in August and September. While no organizational units were added or subtracted in the intervening period, the number of personnel (and, indeed, the individuals) in the sample organizational units did change.

At the time the second stage sample was selected, a roster could have been prepared for each of the organizational units sampled at the first stage that listed the active duty personnel in each organizational unit. Personnel could be listed in any convenient order and the lines on the roster could be numbered one, two, through M, the total number of persons on the list. A sample line selected at this time would correspond with a person.

Table C.3. Allocation of the Sample

Region	Service	Total Number of First Stage Sampling Units	First Stage Sample Size	Second Stage Sample Size (targetted)
Americas	Army	98	7	3,150
	Navy	78	6	2,871
	Marine Corps	39	2	900
	Air Force	92	6	2,700
	Total	307	21	9,621
North Pacific	Army	19	4	1,800
	Navy	3	2	1,040
	Marine Corps	3	3	1,350
	Air Force	5	3	1,350
	Total	30	12	5,540
Other Pacific	Army	4	2	900
	Navy	8	5	2,452
	Marine Corps	3	2	900
	Air Force	3	2	900
	Total	18	11	5,152
Europe	Army	92	9	4,050
	Navy	6	2	944
	Marine Corps ^a	0	0	-
	Air Force	22	3	1,350
	Total	120	14	6,429
Total Worldwide	Army	213	22	9,900
	Navy	95	15	7,307
	Marine Corps	45	7	3,235
	Air Force	122	14	6,300
	Total	475	58	26,742

^aMarine Corps personnel in Europe were classified into Navy first stage units.

A roster prepared seven months later for the same organizational units will likely contain either more or fewer lines than the earlier list. If the organizational unit has decreased in size, some of the line numbers on the first roster will not correspond to any name on the new roster. If the organizational unit has increased in size, the lines on the new roster can be numbered,

$$1, 2, \dots, M, M+1, M+2, \dots, 2M, \dots, M^*,$$

where

M^* = the total number of persons on the new roster.

If the value, M , is subtracted from the line numbers between $M+1$ and $2M$, the value $2M$ from the line numbers between $2M+1$ and $3M$, and so on through M^* , the line numbers on the original roster can be made to correspond with one or more line numbers on the new roster.

In this way, the line numbers on the original roster can be made to correspond to clusters of zero, one, two or possibly more persons on the new roster, thereby accommodating any changes in the personnel complement of an organizational unit. Probability assignments and randomization procedures are applied to the implied clusters of persons to select the (second stage) sample.

Accordingly, second stage sampling units are clusters of active duty personnel in August and September 1982. The number of clusters assigned to a sample first stage unit is determined as the number of persons in each of the organizational units making up the first stage unit in February or March 1982. Persons in each cluster were identified using the procedure described above. The second stage frame was stratified by pay grade group, using the groups defined by the pay grades E1-E5, E6-E9, W1-W4 (excepting the Air Force which does not have warrant officer grades), O1-O3 and O4-O6. The second stage sample was allocated to the strata within each first stage unit to provide a self weighting sample at the level of pay grade groups within first stage strata, as closely as the actual numbers involved would permit. The distribution of the second stage sample is shown in Table C.4.

D. Sample Allocation and Selection

Composite size measures for selecting the first stage sample were constructed using the number of persons in each pay grade group in each first stage unit. Notationally, denote by,

$$h = 1, 2, \dots, 15$$

the first stage strata. First stage sampling units listed in the frame are identified by the subscript,

$$i = 1, 2, \dots, N_1(h),$$

and in the sample by,

$$i = 1, 2, \dots, n_1(h).$$

The range of the subscript differentiates between units in the frame and units in the sample. The total first stage units in the frame classified into the h -th stratum, $N(h)$, and the total first stage sample size selected from the h -th stratum, $n(h)$, are shown in Table 3.3. Second stage strata are identified by the subscript,

$$j = 1, 2, \dots, 5.$$

Second stage units in each of the pay grade strata are identified by the subscript,

$$k = 1, 2, \dots, N_2(h, i, j),$$

denoting units in the second stage frame, or by,

$$k = 1, 2, \dots, n_2(h, i, j)$$

denoting units in the second stage sample. The values, $N_2(h, i, j)$ are computed using the personnel counts in each of the organizational units discussed in section 2.

In calculating the composite size measures, the objective is to make equal, for specified values of the h -subscript and the j -subscript, the expected frequencies with which second stage units are selected into the sample, given the sample size requirements listed in Table 3.3. Let,

$\pi(h, i)$ = the expected frequency of selecting the i -th first stage unit from the h -th stratum in samples of size, $n_1(h)$, and,

$\pi(k|h, i, j)$ = the expected frequency of selecting the k -th second stage unit from the j -th pay grade stratum conditionally on the selection of the i -th first stage unit given the second stage sample sizes in Table 3.3.

Table C.4. Distribution of the Second Stage Sample

Region/Service	First Stage Unit	Second Stage Sample Size ^{1/}					Total
		E1-E5	E6-E9	W1-W4	01-03	04-06	
<u>Americas</u>	Total	6,750	1,635	88	789	372	9,634
Army	Total	2,193	514	76	245	79	3,107
	008	232	80	41	70	21	444
	014	312	61	7	43	21	444
	021	320	76	3	37	7	443
	037	350	69	1	16	7	443
	044	319	85	10	24	5	443
	047	331	70	8	27	9	445
	075	329	73	6	28	9	445
Navy	Total	2,220	542	8	138	56	2,964
	123	478	125	2	55	23	682
	310	423	26	1	3	1	454
	314	348	78	2	26	6	460
	351	320	104	1	22	5	452
	402	329	104	1	9	7	450
	410	322	105	1	24	14	466
Marine Corps	Total	715	102	4	53	14	888
	515	378	48	1	13	4	444
	926	337	54	3	40	10	444
Air Force	Total	1,622	477	-	353	223	2,675
	011	268	82	-	49	46	445
	029	286	75	-	49	36	446
	052	301	75	-	49	20	445
	065	166	76	-	126	79	447
	087	298	85	-	40	22	445
	110	303	84	-	40	20	447
<u>North Pacific</u>	Total	4,092	938	48	315	145	5,538
Army	Total	1,289	300	34	111	45	1,779
	106	360	55	4	24	3	446
	114	346	61	8	25	4	444
	115	249	109	10	42	34	444
	117	334	75	12	20	4	445
Navy	Total	776	204	6	64	36	1,086
	201 ^{2/}	388	102	3	32	18	543

Table C.4 (continued)

Region/Service	First Stage Unit	Second Stage Sample Size ^{1/}					Total
		E1-E5	E6-E9	W1-W4	01-03	04-06	
Marine Corps	Total	1,060	182	8	58	25	1,333
	309	382	35	1	20	5	443
	667	333	78	3	19	12	445
	929	345	69	4	19	8	445
Air Force	Total	967	252	-	82	39	1,340
	118	330	80	-	27	10	447
	119	334	81	-	24	7	446
	120	303	91	-	31	22	447
<u>Other Pacific</u>	Total	3,474	1,070	38	326	241	5,149
Army	Total	571	177	23	45	73	889
	118	346	666	7	20	4	443
	121	225	111	16	25	69	446
Navy	Total	1,594	614	12	166	93	2,479
	060	386	149	3	61	37	636
	206	275	123	3	37	22	460
	256	298	126	4	14	3	445
	420	330	93	1	28	12	464
	421	305	123	1	26	19	474
Marine Corps	Total	767	77	3	35	10	892
	064	367	49	1 _{3/}	24	4	445
	558	400	28	2 _{3/}	11	6	447
Air Force	Total	542	202	-	80	65	889
	113	232	119	-	43	50	444
	114	310	83	-	37	15	445
<u>Europe</u>	Total	4,649	1,089	50	348	196	6,332
Army	Total	3,159	580	40	185	35	3,999
	124	357	63	1	20	3	444
	132	361	62	1	18	1	443
	141	345	67	6	21	7	446
	155	338	73	3	23	5	442
	162	345	70	2	21	6	444
	169	352	67	3	19	6	447
	176	355	63	3	21	3	445
	197	346	57	18	21	2	444
	202	360	58	3	21	2	444

Table C.4 (continued)

Region/Service	First Stage Unit	Second Stage Sample Size ^{1/}					Total
		E1-E5	E6-E9	W1-W4	01-03	04-06	
Navy	Total	542	222	8	62	96	930
	215	307	115	2	25	31	480
	231	235	107	6	37	65	450
Marine Corps	Total ^{4/}	46	9	2	4	7	68
	215N ^{4/}	11	2	-	2	2	17
	230N ^{4/}	35	7	2	2	5	51
Air Force	Total	902	278	-	97	58	1,335
	092	252	105	-	48	40	445
	094	328	82	-	27	9	446
	107	322	91	-	22	9	444
<u>Total Worldwide</u>	Total	18,965	4,732	224	1,778	954	26,653
Army	Total	7,212	1,571	173	586	232	9,774
Navy	Total	5,132	1,582	34	430	281	7,459
Marine Corps	Total	2,588	370	17	150	56	3,181
Air Force	Total	4,033	1,209	-	612	385	6,239

^{1/} A dash in any column indicates the pay grade group was not represented in the population at the first stage unit.

^{2/} First stage units were selected twice by the minimum replacement randomization procedure.

^{3/} The computed second stage allocation was zero. The sample size was determined as the minimum of five or the total number of persons in the pay grade group.

^{4/} Navy first stage units.

The value,

$$\pi(h,i) = n_1(h) \frac{S(h,i)}{S(h)},$$

where,

$S(h,i)$ = the size of the i -th first stage unit in the h -th stratum, and,

$$S(h) = \sum_{i=1}^{N_1(h)} S(h,i),$$

and the value,

$$\pi(k|h,i,j) = \frac{n_2(h,i,j)}{N_2(h,i,j)}, \quad k = 1, 2, \dots, N_2(h,i,j).$$

Computing the composite size measures is equivalent to finding values, $S(h,i)$ and $n_2(h,i,j)$, such that,

$$\begin{aligned} \pi(h,i,j,k) &= \pi(h,i) \pi(k|h,i,j) \\ &= K(h,j), \end{aligned}$$

a constant within values of the h -subscript and the j -subscript.

The solutions are given by,

$$S(h,i) = \sum_{j=1}^5 f(h,j) N_2(h,i,j),$$

and,

$$n_2(h,i,j) = \frac{n_2(h) f(h,i) N_2(h,i,j)}{S(h,i)},$$

where,

$f(h,j)$ = the sampling frequency to be used in the j -th pay grade group relative to the other pay grade groups in the h -th first stage stratum, and,

$n_2(h)$ = the targetted second stage sample sizes listed in Table C.3.

With reference to the values, $f(h,j)$, second stage units were allocated proportionally to the pay grade group strata.

Given the values,

$$S(h,i) \quad , \quad i = 1, 2, \dots, N_1(h), \\ h = 1, 2, \dots, 15,$$

and the stratum allocations in Table C.3, the first stage sample was selected with probability proportional to size and with minimum replacement (Chromy, 1979). The second stage sample sizes, $n_2(h,i,j)$, were then computed, and the second stage sample was selected with equal probability and without replacement. Independent second stage samples were selected from any first stage unit selected more than once under the minimum replacement procedure.

A total of 58 first stage units and 26,585 second stage units were selected in this manner. Marine Corps MCCs/RUCs in Europe were grouped by inspection with Navy first stage units. An additional 68 Marine Corps second stage units were selected from within the sampled Navy first stage units, with equal probability and without replacement from within the affected MCCs/RUCs. The sample size in this case was arbitrary.

Details of estimation procedures are discussed in Appendix D, the Weighting class adjustments procedure is reported in Appendix E, and implications of nonresponse compensation procedures are detailed in Appendix F.

Appendix D

Sampling Estimation Procedures

Table F.3. Drug and Alcohol Use During Phase I and Phase II Data Collection

Drug and Alcohol Use	Data Collection Period		
	Phase I	Phase II	Total
Drug Use During Past 30 Days			
Marijuana or hashish	18.2	11.3	16.5
PCP	0.6	0.7	0.6
LSD or other hallucinogens	2.3	1.6	2.1
Cocaine	3.2	2.3	2.9
Amphetamines or other stimulants	5.0	2.9	4.5
Tranquilizers	1.3	0.8	1.2
Barbiturates or other sedatives	1.3	0.9	1.2
Heroin	0.5	0.5	0.5
Other opiates	0.8	0.6	0.7
Other drugs	3.6	2.2	3.2
Average Daily Ounces of Ethanol			
None (no drinks)	12.1	10.0	11.6
0.01-0.40 (<1 drink)	33.6	35.8	34.1
0.41-2.16 (1-4 drinks)	33.6	34.5	33.8
2.17-3.16 (5-7 drinks)	9.3	9.4	9.4
3.17-6.00 (8-12 drinks)	6.8	6.5	6.7
6.01 or more (>12 drinks)	4.6	3.8	4.4
Alcohol Problem Categories			
Not affected	77.5	77.7	77.5
Affected/Not Dependent	13.2	14.4	13.5
Dependent	9.3	7.9	9.0
Pay Grade			
E1-E5	70.1	64.6	68.9
E6-E9	19.4	20.0	19.6
W1-W4	0.8	0.8	0.8
O1-O3	6.2	9.1	6.8
O4-O6	3.5	5.5	3.9

Note: Data entries are percentages.

same principle, but computed at total survey levels, were generated and are shown in Table F.2. The Table F.1 point estimates are repeated in Table F.2 to facilitate comparison.

The Table F.2 comparisons suggest that, in the case of alcohol use frequencies, respondents and nonrespondents are substantially alike and the standard weighting class adjustments used perform well. However, in the case of drug use frequencies, the standard weighting class procedures seem to consistently overestimate drug use, perhaps up to about 4% (i.e., the Marine Corps, zero day comparison). Substantiation of this conclusion should be sought in terms of known differences in opportunity and/or behavior between respondents and nonrespondents. For example, in the case of the Navy, nonrespondents might tend to be ship borne personnel, in which case differences in opportunity, if not behavior, might be expected in comparison to shore based personnel.

Of course, this analysis assumes that drug use of nonrespondents follows the reduced pattern of use observed by phase II relative to phase I respondents. Whether that would occur is unclear. It is just as likely that those who didn't respond are users of drugs who avoided participating in the survey rather than nonusers.

Since the analysis reported above was based on data obtained during phase I and phase II data collection, it may be of interest to examine levels of drug and alcohol use directly for the two phases. Table F.3 provides such data for the two data collection periods. The data indicate that phase II respondents reported less drug use than phase I respondents, about the same level of alcohol use and about the same level of alcohol problems. The paygrade distribution indicates fewer E1-E5 respondents and more O1-O6 respondents at phase II compared to phase I data collection.

Table F.2. Comparison of Approximate Nonlinear Path With Linear Path Weighting Class Adjusted Point Estimates

Use Variable and Service	Point Estimate	
	Nonlinear Path	Linear Path
1. Frequency of any alcohol use in the past 30 days		
Army		
zero days	14.0	13.7
1-10 days	57.2	57.1
11-30 days	28.8	29.2
Navy		
zero days	17.4	19.2
1-10 days	56.8	55.1
11-30 days	25.8	25.7
Marine Corps		
zero days	16.6	16.9
1-10 days	56.9	55.7
11-30 days	26.4	27.3
Air Force		
zero days	13.8	14.1
1-10 days	61.6	61.4
11-30 days	24.6	24.5
2. Frequency of any drug use in the past 30 days		
Army		
zero days	76.9	73.8
1-10 days	14.4	16.0
11-30 days	8.7	10.1
Navy		
zero days	84.9	83.8
1-10 days	10.7	11.3
11-30 days	4.4	4.9
Marine Corps		
zero days	83.1	79.4
1-10 days	10.7	12.5
11-30 days	6.3	8.0
Air Force		
zero days	88.6	88.1
1-10 days	8.1	8.4
11-30 days	3.3	3.5

The weighting class adjustment used in the analysis can be given a graphical interpretation. Define,

$$w(g) = [\pi(g)]^{-1}$$

$$y' = \sum_{g \in R} w(g) Y(g) \delta(g),$$

$$x' = \sum_{g \in R} w(g) .$$

Then the weighting class adjustment is equivalent to the straight line projection from the origin through the minimum bias estimate, $x'y'$, to the point of full response given by,

$$y = y' + b [x - x'],$$

where,

$$x = \sum_{g \in S} w(g).$$

A straight line can be drawn in a similar manner using only the information from the first contact. If the average responses in the first and second contacts are the same, the two lines will have the same slope. This result provides evidence that the nonrespondents resemble the respondents at the first contact and provides an argument that the same situation might therefore be reasonably expected to occur at the second contact. That is, evidence is supplied that the nonresponse compensation procedure performs well, at least if the response rate for the survey is reasonably high.

Conversely, if the two lines have different slopes, evidence is provided that the characteristics of respondents change as data collection becomes more complete. Under this circumstance, an argument can be made to project the rate of change of the slopes to the point of full response instead of the straight line projection.

A nonlinear path weighting class procedure using this principle has been developed at RTI. The procedure takes into account any changes in respondent characteristics over the data collection period, as described above, and is algebraically equivalent to the standard weighting class adjustment if respondent characteristics do not change. A full analysis would compute point and interval estimates using the nonlinear path procedure for comparison with the estimates in Table F.1 using the same weighting classes. While budget limitations have precluded this possibility, point estimates based on the

Bounding the sample estimate in this way was first suggested for estimates of binomial proportions¹ (Birnbaum, Z. W., and M. G. Sirken, 1950), in which case,

$$Y(g) = 1, \text{ all } g\text{'s.}$$

The bounds are the sample estimates that would be obtained given the minimum (i.e., the most negative) and maximum missing data biases, respectively. Sample estimates of the bounds are, of course, subject to sampling variability as are other point estimates.

Table F.1 shows the point estimates for selected frequencies of drug and alcohol use by Service computed using the missing data compensation procedure. Shown as well are the (approximate) 95% confidence intervals associated with each estimate accordingly as only the sampling variance or the sampling variance plus the bias potential of the point estimates is considered. The latter intervals are obtained by subtracting twice the standard error of the estimated lower bound and adding twice the standard error of the estimated upper bound from and to each estimate.

The latter intervals express very much of a worst case scenario and are considered to be ultra conservative by usually accepted standards. On the one hand a user of the data is assured of being correct in claiming the population proportions are indeed contained in the indicated intervals. On the other hand the intervals are sufficiently wide as to obfuscate potentially interesting information. Clearly some assessment of how well the compensation procedure performs, that is, how closely the nonresponding population resembles the responding population in each weighting class, is needed.

A comparison of the information obtained from the group sessions with that obtained from the follow-up operations provides a basis for such an assessment. In what follows, the information obtained from the phase I data collection is defined to be the information available at the first contact. This information plus that obtained from the phase II data collection is defined to be information available at the second contact.

¹In other than the binomial case, the Y-values are likely to be unknown for nonrespondents unless exact size measures were available for designing the sample. Hence, in other than the binomial case, only the lower bound can usually be computed.

Table F.1. Approximate 95% Confidence Intervals for Selected Drug and Alcohol Use Variables by Service

Use Variable and Service	Point Estimate ¹	Interval Estimate Based on			
		Variance of Point Estimate		Variance and Bias Potential of Point Estimate	
1. Frequency of any alcohol use in the past 30 days					
Army					
zero days	13.7	12.6 -	14.7	9.4 -	37.9
1-10 days	57.1	56.6 -	58.7	41.1 -	69.9
11-30 days	29.2	27.5 -	30.9	20.3 -	49.0
Navy					
zero days	19.2	13.2 -	25.2	10.7 -	42.6
1-10 days	55.1	52.7 -	57.5	40.9 -	66.8
11-30 days	25.7	19.7 -	31.7	15.6 -	44.8
Marine Corps					
zero days	16.9	14.1 -	19.8	11.9 -	50.7
1-10 days	55.7	51.9 -	59.5	32.0 -	70.8
11-30 days	27.3	26.1 -	28.6	17.2 -	55.9
Air Force					
zero days	14.1	12.3 -	15.9	11.3 -	23.1
1-10 days	61.4	59.8 -	62.9	54.5 -	66.1
11-30 days	24.5	22.4 -	26.7	20.7 -	33.5
2. Frequency of any drug use in the past 30 days					
Army					
zero days	73.8	70.2 -	77.5	52.2 -	83.5
1-10 days	16.0	14.3 -	17.8	10.4 -	40.1
11-30 days	10.1	7.8 -	12.5	5.7 -	36.0
Navy					
zero days	83.8	79.3 -	88.3	64.9 -	90.8
1-10 days	11.3	6.8 -	15.8	6.4 -	32.0
11-30 days	4.9	3.2 -	6.6	2.6 -	28.1
Marine Corps					
zero days	79.4	75.4 -	83.5	46.5 -	85.3
1-10 days	12.5	10.9 -	14.2	8.5 -	47.2
11-30 days	8.0	5.6 -	10.4	5.5 -	45.0
Air Force					
zero days	88.1	85.1 -	91.2	77.4 -	92.0
1-10 days	8.4	5.6 -	11.1	5.0 -	18.8
11-30 days	3.5	2.2 -	4.8	2.0 -	14.6

¹Weighting class adjusted at the item level.

Implications of Nonresponse Compensation Procedures

The nonresponse compensation procedure used in the analysis has an interpretation as a substitution procedure. In this context, the average value of an observation variable is computed over all respondents in a specified pay grade group and first stage unit. The average value is then substituted in place of any missing observations in the same pay grade group and first stage unit. Individuals in the same pay grade group and first stage unit are said to belong to the same weighting class.

If the nonrespondents and respondents in the same weighting class in fact have the same average value of a given observation variable, the compensation procedure provides unbiased parameter estimates. In this case the standard errors shown in the data tables estimate the uncertainty associated with the parameter estimates.

If, however, nonrespondents and respondents in the same weighting class behave differently, then biases of unknown magnitude and sign introduce additional uncertainty, not included in the standard errors. In addressing policy issues, an assessment of the additional uncertainty due to the nonresponse bias potential may assume some importance.

Following the notation in Appendix D, the unbiased estimate of a domain total is bounded in the interval,

$$\left[\sum_{g \in R} \frac{Y(g) \delta(g)}{\pi(g)}, \sum_{g \in S} \frac{Y(g)}{\pi(g)} - \sum_{g \in R} \frac{Y(g)}{\pi(g)} [1 - \delta(g)] \right],$$

where $\sum_{g \in R}$ denotes summation over the respondent set and,

$$\begin{aligned} \delta(g) &= \delta_c(g) \delta_d(g) \\ &= 1, \text{ if the responding unit is an eligible domain member,} \\ &= 0, \text{ otherwise.} \end{aligned}$$

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Appendix F
Implications of Nonresponse Compensation Procedures

Weighting Class Adjustment Procedure

Weighting class adjustments were used to compensate for missing data at the questionnaire item level. Weighting classes, denoted by,

$$m = 1, 2, \dots, 300,$$

were defined by pay grade groups within first stage units. In the case of the Marine Corps sample in Europe, separate weighting classes were defined for sample Marines within the Navy first stage units.

Denote by, $\sum_{k \in m}$, summation over all of the second stage units in the

m -th weighting class, and by, $\sum_{k \in m, c}$ summation over all of the second stage

units for which the response variable value, $y_c(h, i, j, k)$ was obtained. The adjusted weights,

$$w_c(h, i, j, k) = w(h, i, j, k) \frac{\sum_{k \in m} w(h, i, j, k)}{\sum_{k \in m, c} w(h, i, j, k)},$$

were computed for each questionnaire item, or recoded questionnaire item. The values, $w_c(h, i, j, k)$, were then used in place of the sampling weights, $w(h, i, j, k)$, in the estimation formulas described in Appendix D.

Appendix E

Weighting Class Adjustment Procedure

Domain comparisons, taking the form of differences or other linear combinations of domain estimates, have, in general, a covariance arising from the two stage selection of the sample. That is, using a difference between two domains by way of example,

$$\text{Var}\{\hat{\theta}_1 - \hat{\theta}_2\} = \text{Var}\{\hat{\theta}_1\} + \text{Var}\{\hat{\theta}_2\} - 2 \text{Cov}\{\hat{\theta}_1, \hat{\theta}_2\},$$

where, $\hat{\theta}_1$ and $\hat{\theta}_2$ denote the two domain estimates. In terms of the previous formulas, the first stage level differences,

$$\hat{D}_c(h, i) = \hat{T}_{c,1}(h, i) - \hat{T}_{c,2}(h, i) \quad , \quad i = 1, 2, \dots, n_1(h), \\ h = 1, 2, \dots, 15,$$

can be computed and used in equation (3), noting that,

$$A_c(h) = \frac{1}{n_1(h)} \sum_{i=1}^{n_1(h)} \hat{D}_c(h, i),$$

to estimate the variance of the difference. Except as the necessary distributional assumptions may not apply, the quasi Student's t statistic,

$$t^* = \frac{\hat{\theta}_1 - \hat{\theta}_2}{[\text{Var}\{\hat{\theta}_1 - \hat{\theta}_2\}]^{1/2}},$$

could be used with 43 degrees of freedom as an indicator of the statistical significance of the difference.

$$k = 1, 2, \dots, n_2(h,i,j),$$

to denote sample persons in this section, while unusual notation, does simplify the presentation.

B. Estimates of Population Proportions

Estimates of population proportions take the form of (combined) ratio estimates, denoted in general by,

$$\hat{R}_c = \frac{\hat{T}_c}{\hat{T}_{c'}} \quad , \quad c \neq c' \quad .$$

The numerator and denominator totals are individually estimated as described above. Since the numerator and denominator quantities are random variables, the estimator is a nonlinear statistic. Ratio estimates are not in general unbiased, however the bias becomes negligible in large samples (see, for example, Cochran, 1963).

The variance of the estimator can be approximated using a Taylor series linearization. The linearized response variable value,

$$z_c(h,i,j,k) = y_c(h,i,j,k) - \hat{R}_c y_{c'}(h,i,j,k) \quad (4)$$

is computed and used in place of the y_c -value in equation (2). The variance estimate is then computed as given in equation (3).

C. Domain Estimates

Membership of a sample person in some specified subpopulation or domain of interest can be denoted by the indicator variable,

$$\begin{aligned} \delta(h,i,j,k) &= 1, \text{ if the } k\text{-th sample individual (in the } j\text{-th pay} \\ &\quad \text{grade group, } i\text{-th first stage unit and } h\text{-th first} \\ &\quad \text{stage stratum) is a member of the domain,} \\ &= 0, \text{ otherwise.} \end{aligned}$$

It is clear that the products, $\delta(h,i,j,k) y_c(h,i,j,k)$, when substituted for the y_c -values alone in the previous formulas, restrict the calculations to the specified domain. It should perhaps be emphasized that the ranges of summation in the formulas remain the same, namely over all of the individuals in the sample. This convention ensures that sampling variances are computed using the correct sample sizes.

Response variables, or observation variables, which are questionnaire items or quantities recoded from questionnaire items, are denoted by, Y_c , with the value of, c , identifying a particular response variable. The values obtained for the response variables are denoted by, y_c .

A population total is estimated by the quantity,

$$\hat{T}_c = \sum_{h=1}^{15} \frac{n_1(h)}{n_1(h)-1} \sum_{i=1}^5 \sum_{j=1}^{n_2(h,i,j)} \sum_{k=1}^{n_2(h,i,j)} w(h,i,j,k) y_c(h,i,j,k). \quad (1)$$

The estimator is unbiased if the correct y_c -values were obtained for every individual in the sample.

For purposes of estimating the sampling variances, it is convenient to rewrite equation (1) as a sum of the separate estimates for each of the sampled first stage units. To this end, define,

$$\hat{T}_c(h,i) = \sum_{j=1}^5 \sum_{k=1}^{n_2(h,i,j)} w(h,i,j,k) y_c(h,i,j,k). \quad (2)$$

Then equation (1) can be rewritten as,

$$\hat{T}_c = \sum_{h=1}^{15} \frac{n_1(h)}{n_1(h)-1} \sum_{i=1}^5 \hat{T}_c(h,i),$$

and the sampling variance, assuming sampling with replacement at the first stage of the design, is estimated by,

$$\hat{\text{Var}}\{\hat{T}_c\} = \sum_{h=1}^{15} \frac{n_1(h)}{n_1(h)-1} \sum_{i=1}^5 [\hat{T}_c(h,i) - A_c(h)]^2 \quad (3)$$

where,

$$A_c(h) = \frac{1}{n_1(h)} \sum_{i=1}^5 n_2(h,i,j) \hat{T}_c(h,i).$$

In Appendix C, the quantity, $n_2(h,i,j)$, was defined as the number of second stage units. The notation of Appendix C implicitly assumes a one to one correspondence between second stage sampling units and sample persons, which is not the case. However, it is the case that the sampling weight, $w(h,i,j,k)$, applies to all sample persons in the k -th second stage sampling unit, since all such persons were included in the sample. Using the subscript,

Sampling Estimation Procedures

The notation used below builds on that of the Sampling discussion in Appendix C. The estimation of population totals and their associated sampling variances is discussed first. In this case the estimators are linear statistics and their variances can be expressed in closed form. Next the discussion focuses on estimation of population proportions which comprise much of the tabular results presented in this report. The estimators in this case are nonlinear statistics. The sampling variances for the nonlinear statistics are estimated using Taylor series linearizations. Many of the tables contain estimates of parameters describing subpopulations or domains defined within the total population of inferential interest. Discussed third is the estimation of domain parameters.

Ordinary least squares (see, for example, Graybill, 1961) was used to estimate the regression relations described in Chapter 9 of this report. Inferences in that chapter are, therefore, not population based. Since they are not used in the report, estimation procedures for regression analyses having population based inferential ability are not described.

Estimation procedures used for comparing the 1982 military and civilian populations are described in Chapter 8 as are the approximate procedures used to compare the 1980 and 1982 surveys.

A. Estimates of Population Totals

In Appendix C the quantities,

$\pi(h,i,j,k)$ = the expected frequency with which the k-th second stage unit was selected from within the j-th pay grade group, i-th first stage unit and h-th first stage stratum, given the first and second stage sample sizes used,

were defined. In this section it is convenient to use the inverses of these quantities,

$$w(h,i,j,k) = [\pi(h,i,j,k)]^{-1},$$

which are the sampling weights.

Appendix G

Prevalence Estimates of Selected
Individual Drugs During the Past 30 Days
and the Past 12 Months

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Table G.1. PCP Use During the Past 30 Days

Region/Pay Grade	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
Americas						
E1-E5	1.0 (0.3)	1.0 (0.5)	0.8 (0.4)	0.2 (0.1)		0.8 (0.2)
E6-E9	0.2 (0.2)	0.3 (0.3)	0.0 (**)	0.0 (**)		0.2 (0.1)
01-03	0.0 (**)	0.0 (**) +	0.0 (**) +	0.3 (0.3)		0.1 (0.1)
04-06	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +		0.0 (**) +
Total	0.7 (0.2)	0.8 (0.3)	0.6 (0.2)	0.2 (0.1)		0.6 (0.1)
North Pacific						
E1-E5	1.1 (0.5)	1.2 (0.6)	1.1 (0.7)	0.1 (0.1)		0.8 (0.3)
E6-E9	0.0 (**) +	0.0 (**) +	0.6 (0.5)	0.0 (**) +		0.1 (0.1)
01-03	0.0 (**) +	0.0 (**) +	2.5 (2.4)	0.0 (**) +		0.5 (0.5)
04-06	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +		0.0 (**) +
Total	0.8 (0.4)	0.8 (0.4)	1.1 (0.5)	0.1 (0.1)		0.7 (0.2)
Other Pacific						
E1-E5	1.3 (0.4)	0.4 (0.2)	1.3 (0.4)	0.4 (0.1)		0.7 (0.1)
E6-E9	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +		0.0 (**) +
01-03	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +		0.0 (**) +
04-06	0.0 (**) +	0.7 (0.8)	0.0 (**) +	0.0 (**) +		0.2 (0.2)
Total	0.8 (0.4)	0.3 (0.1)	1.1 (0.3)	0.2 (0.1)		0.5 (0.1)
Europe						
E1-E5	1.5 (0.3)	0.2 (0.2)	0.0 (0.1)	0.6 (0.1)		1.3 (0.2)
E6-E9	0.2 (0.2)	0.4 (0.4)	0.0 (0.1)	0.0 (0.1)		0.1 (0.1)
01-03	1.2 (1.2)	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)		0.7 (0.8)
04-06	4.1 (3.9)	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)		1.3 (1.3)
Total	1.3 (0.2)	0.2 (0.1)	0.0 (0.1)	0.4 (0.1)		1.0 (0.2)
Total Worldwide						
E1-E5	1.2 (0.2)	1.0 (0.4)	0.9 (0.3)	0.3 (0.1)		0.9 (0.1)
E6-E9	0.2 (0.2)	0.3 (0.3)	0.1 (0.1)	0.0 (0.1)		0.2 (0.1)
01-03	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)		0.0 (0.1)
04-06	0.6 (0.6)	0.1 (0.1)	0.0 (0.1)	0.0 (0.1)		0.1 (0.1)
Total	0.9 (0.2)	0.8 (0.3)	0.7 (0.2)	0.2 (0.1)		0.6 (0.1)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include WI-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

† Less than 20 respondents.

** Informative standard error not available.



Table G.2. PCP Use During the Past 12 Months

Region/Pay Grade	Service					Total Dobl
	Army	Navy	Marine Corps	Air Force		
Americas						
E1-E5	2.4 (0.5)	2.1 (0.6)	1.5 (0.1)	0.3 (0.1)		1.7 (0.3)
E6-E9	0.5 (0.3)	0.3 (0.3)	0.0 (**)	0.0 (**)		0.2 (0.1)
O1-O3	0.0 (**)	0.0 (**)	0.0 (**)	0.3 (0.3)		0.1 (0.1)
O4-O6	0.0 (**)	0.0 (**)	(+)	0.0 (**)		0.0 (**)
Total	1.7 (0.4)	1.6 (0.4)	1.2 (-)	0.2 (0.1)		1.2 (0.2)
North Pacific						
E1-E5	2.0 (1.0)	1.7 (0.1)	2.6 (1.0)	0.3 (0.2)		1.6 (0.4)
E6-E9	0.6 (0.7)	0.0 (**)	1.2 (0.3)	0.0 (**)		0.5 (0.2)
O1-O3	0.0 (**)	0.0 (**)	2.5 (2.4)	0.0 (**)		0.5 (0.5)
O4-O6	0.0 (**)	0.0 (**)	(+)	0.0 (**)		0.0 (**)
Total	1.5 (0.9)	1.2 (0.1)	2.3 (0.7)	0.2 (0.1)		1.3 (0.3)
Other Pacific						
E1-E5	2.8 (1.1)	1.0 (0.4)	2.5 (0.3)	0.8 (0.1)		1.6 (0.3)
E6-E9	0.0 (**)	0.0 (**)	(+)	0.0 (**)		0.0 (**)
O1-O3	0.0 (**)	0.0 (**)	(+)	0.0 (**)		0.0 (**)
O4-O6	0.0 (**)	0.7 (0.8)	(+)	1.5 (0.7)		0.7 (0.5)
Total	1.8 (1.0)	0.7 (0.3)	2.1 (0.2)	0.6 (0.1)		1.1 (0.2)
Europe						
E1-E5	2.8 (0.4)	0.2 (0.2)	0.0 (**)	0.9 (0.1)		2.2 (0.3)
E6-E9	0.2 (0.2)	0.4 (0.5)	0.0 (**)	0.0 (**)		0.1 (0.1)
O1-O3	1.2 (1.2)	0.0 (**)	0.0 (**)	0.0 (**)		0.7 (0.8)
O4-O6	4.1 (3.9)	0.0 (**)	(+)	0.0 (**)		1.3 (1.3)
Total	2.3 (0.3)	0.2 (-)	0.0 (**)	0.6 (0.1)		1.7 (0.2)
Total Worldwide						
E1-E5	2.5 (0.4)	2.0 (0.5)	1.7 (0.2)	0.4 (0.1)		1.8 (0.2)
E6-E9	0.4 (0.2)	0.3 (0.3)	0.2 (0.1)	0.0 (**)		0.2 (0.1)
W1-W4 ^a	0.0 (**)	0.0 (**)	(+)	*		0.0 (**)
O1-O3	0.2 (0.2)	0.0 (**)	0.2 (0.3)	0.3 (0.3)		0.2 (0.1)
O4-O6	0.6 (0.6)	0.1 (0.1)	0.0 (**)	0.1 (0.1)		0.2 (0.1)
Total	1.9 (0.3)	1.5 (0.4)	1.4 (0.1)	0.3 (0.1)		1.3 (0.1)

Note: fahled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include WI-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

~ Estimate rounds to zero.

* Less than 20 respondents.

****Informative standard error not available.**

Table G.3. LSD or Other Hallucinogen Use During the Past 30 Days

Region/Pay Grade	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
Americas						
E1-E5	2.9 (0.7)	3.3 (0.6)	5.8 (0.6)	1.0 (0.4)		2.9 (0.3)
E6-E9	0.2 (0.2)	0.6 (0.6)	0.0 (**)	0.0 (**)		0.3 (0.2)
O1-O3	0.0 (**)	0.0 (**)	0.0 (**)†	0.3 (0.3)		0.1 (0.1)
O4-O6	0.0 (**)†	0.0 (**)†	+	0.0 (**)†		0.0 (**)†
Total	2.0 (0.5)	2.6 (0.6)	4.6 (0.7)	0.7 (0.3)		2.0 (0.3)
North Pacific						
E1-E5	2.0 (0.7)	3.0 (0.3)	3.8 (0.4)	0.4 (0.2)		2.2 (0.3)
E6-E9	0.0 (**)†	0.5 (0.5)	0.6 (0.5)	0.0 (**)†		0.2 (0.1)
O1-O3	0.0 (**)†	0.0 (**)†	5.0 (4.9)	0.0 (**)†		0.9 (0.9)
O4-O6	0.0 (**)†	0.0 (**)†	+	0.0 (**)†		0.0 (**)†
Total	1.4 (0.6)	2.2 (0.3)	3.3 (0.4)	0.3 (0.2)		1.7 (0.2)
Other Pacific						
E1-E5	4.9 (0.5)	2.5 (0.8)	4.9 (3.5)	1.2 (0.2)		3.1 (0.7)
E6-E9	0.0 (**)†	0.0 (**)†	0.0 (**)†	0.0 (**)†		0.0 (**)†
O1-O3	0.0 (**)†	0.0 (**)†	0.0 (**)†	0.0 (**)†		0.0 (**)†
O4-O6	0.0 (**)†	0.7 (0.8)	+	0.0 (**)†		0.2 (0.2)
Total	3.0 (0.9)	1.7 (0.5)	4.1 (2.8)	0.7 (0.1)		2.1 (0.5)
Europe						
E1-E5	4.6 (1.0)	0.9 (0.1)	0.0 (**)†	0.7 (0.2)		3.5 (0.7)
E6-E9	0.2 (0.2)	0.4 (0.4)	+	0.0 (**)†		0.1 (0.1)
O1-O3	1.2 (1.2)	0.0 (**)†	+	0.0 (**)†		0.7 (0.8)
O4-O6	2.0 (1.9)	0.0 (**)†	+	0.0 (**)†		0.7 (0.7)
Total	3.6 (0.8)	0.6 (0.1)	0.0 (**)†	0.5 (0.1)		2.7 (0.5)
Total Worldwide						
E1-E5	3.4 (0.5)	3.2 (0.6)	5.4 (0.6)	1.0 (0.3)		3.0 (0.3)
E6-E9	0.2 (0.1)	0.5 (0.5)	0.1 (0.1)	0.0 (**)†		0.2 (0.1)
W1-W4 ^a	0.0 (**)†	0.0 (**)†	+	*		0.0 (**)†
O1-O3	0.2 (0.2)	0.0 (**)†	0.5 (0.5)	0.3 (0.3)		0.2 (0.2)
O4-O6	0.3 (0.3)	0.1 (0.1)	0.0 (**)†	0.0 (**)†		0.1 (0.1)
Total	2.5 (0.4)	2.5 (0.5)	4.3 (0.6)	0.6 (0.2)		2.1 (0.2)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^a Weighting classes for item nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

† Less than 20 respondents.

** Informative standard error not available.

Table 6.4. LSD or Other Hallucinogen Use During the Past 12 Months

Region/Pay Grade	Service				Total Doll
	Army	Navy	Marine Corps	Air Force	
Americas					
E1-E5	6.7 (1.1)	8.9 (1.0)	9.0 (0.9)	2.3 (0.3)	6.6 (0.5)
E6-E9	0.7 (0.3)	0.8 (0.6)	0.0 (**)	0.0 (**)	0.5 (0.2)
O1-O3	1.1 (0.6)	1.2 (1.2)	0.0 (**) +	0.3 (0.3)	0.7 (0.3)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
Total	4.8 (0.8)	6.9 (0.8)	7.1 (1.1)	1.5 (0.3)	4.7 (0.4)
North Pacific					
E1-E5	4.4 (1.0)	7.1 (0.4)	9.5 (1.3)	1.9 (0.2)	5.4 (0.5)
E6-E9	0.3 (0.3)	0.5 (0.5)	0.6 (0.5)	0.4 (0.4)	0.4 (0.2)
O1-O3	0.8 (0.9)	0.0 (**) +	5.0 (4.9)	1.3 (1.4)	1.6 (1.1)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
Total	3.2 (0.9)	5.0 (0.1)	7.7 (1.2)	1.5 (0.2)	4.1 (0.4)
Other Pacific					
E1-E5	10.1 (2.7)	6.1 (1.8)	8.1 (3.8)	2.5 (0.1)	6.5 (1.2)
E6-E9	0.0 (**) +	0.2 (0.2)	0.0 (**) +	0.0 (**) +	0.1 (0.1)
O1-O3	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
O4-O6	0.0 (**) +	0.7 (0.8)	0.0 (**) +	0.0 (**) +	0.2 (0.2)
Total	6.2 (3.0)	4.1 (1.2)	6.9 (2.9)	1.6 (0.1)	4.3 (0.9)
Europe					
E1-E5	9.8 (1.4)	2.1 (1.5)	0.0 (**) +	2.4 (0.3)	7.8 (1.0)
E6-E9	0.5 (0.3)	0.4 (0.5)	0.0 (**) +	0.0 (**) +	0.4 (0.2)
O1-O3	1.2 (1.2)	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.7 (0.8)
O4-O6	2.0 (1.9)	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.7 (0.7)
Total	7.7 (1.1)	1.3 (0.8)	0.0 (**) +	1.6 (0.4)	5.8 (0.8)
Total Worldwide					
E1-E5	7.7 (0.8)	8.6 (0.9)	8.9 (0.8)	2.3 (0.3)	6.7 (0.4)
E6-E9	0.6 (0.2)	0.7 (0.5)	0.1 (0.1)	0.0 (**) +	0.4 (0.2)
W1-W4 ^a	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
O1-O3	1.1 (0.5)	1.0 (1.0)	0.5 (0.5)	0.3 (0.3)	0.7 (0.3)
O4-O6	0.3 (0.3)	0.1 (0.1)	0.0 (**) +	0.0 (**) +	0.1 (0.1)
Total	5.6 (0.6)	6.5 (0.7)	7.1 (0.9)	1.5 (0.2)	4.8 (0.3)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

+ Less than 20 respondents.

** Informative standard error not available.

Table G.5. Cocaine Use During the Past 30 Days

Region/Day Grade	Service				
	Army	Navy	Marine Corps	Air Force	Total DoD
Americas					
E1-E5	5.3 (1.0)	4.4 (1.2)	5.2 (0.8)	2.3 (0.7)	4.2 (0.6)
E6-E9	0.3 (0.2)	0.3 (0.3)	1.2 (1.2)	0.2 (0.2)	0.3 (0.2)
01-03	1.5 (0.6)	0.0 (**)	0.0 (**) +	0.3 (0.3)	0.6 (0.3)
04-06	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
Total	3.8 (0.7)	3.3 (0.9)	4.3 (1.0)	1.4 (0.5)	3.0 (0.4)
North Pacific					
E1-E5	3.1 (0.4)	1.5 (0.3)	3.0 (1.6)	1.0 (0.3)	2.3 (0.5)
E6-E9	0.3 (0.3)	0.5 (0.5)	0.6 (0.5)	0.0 (**) +	0.3 (0.2)
01-03	0.8 (0.9)	0.0 (**) +	5.0 (4.9)	0.0 (**) +	1.2 (1.0)
04-06	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
Total	2.3 (0.5)	1.1 (0.3)	2.7 (1.3)	0.7 (0.3)	1.8 (0.3)
Other Pacific					
E1-E5	8.0 (0.7)	5.8 (2.2)	3.1 (1.0)	2.3 (1.4)	4.9 (1.0)
E6-E9	0.0 (**) +	0.2 (0.2)	0.0 (**) +	0.0 (**) +	0.1 (0.1)
01-03	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
04-06	0.0 (**) +	0.7 (0.8)	0.0 (**) +	0.0 (**) +	0.2 (0.2)
Total	4.9 (1.5)	3.9 (1.4)	2.6 (0.7)	1.4 (0.7)	3.3 (0.7)
Europe					
E1-E5	4.6 (0.4)	2.2 (1.1)	0.0 (**) +	1.1 (0.1)	3.7 (0.3)
E6-E9	0.8 (0.5)	1.3 (0.5)	0.0 (**) +	0.0 (**) +	0.6 (0.3)
01-03	1.2 (1.2)	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.7 (0.8)
04-06	4.1 (3.9)	0.0 (**) +	0.0 (**) +	0.0 (**) +	1.3 (1.3)
Total	3.8 (0.4)	1.6 (0.6)	0.0 (**) +	0.7 (0.3)	2.9 (0.3)
Total Worldwide					
E1-E5	5.0 (0.6)	4.3 (1.1)	4.8 (0.7)	2.0 (0.6)	4.0 (0.4)
E6-E9	0.4 (0.2)	0.4 (0.3)	1.0 (1.0)	0.2 (0.2)	0.4 (0.1)
W1-W4 ^a	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
01-03	1.4 (0.5)	0.0 (**) +	0.5 (0.5)	0.3 (0.3)	0.6 (0.2)
04-06	0.6 (0.6)	0.1 (0.1)	0.0 (**) +	0.0 (**) +	0.1 (0.1)
Total	3.7 (0.5)	3.3 (0.8)	3.9 (0.8)	1.3 (0.4)	2.9 (0.3)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

+ Less than 20 respondents.

** Informative standard error not available.

Table G.6. Cocaine Use During the Past 12 Months

Region/Pay Grade	Service					Total Dbl
	Army	Navy	Marine Corps	Air Force		
Americas						
E1-E5	10.2 (1.5)	13.3 (1.8)	9.4 (0.6)	5.0 (0.9)	9.9 (0.8)	
E6-E9	0.7 (0.3)	0.8 (0.3)	1.2 (1.2)	0.2 (0.2)	0.6 (0.2)	
O1-O3	3.1 (1.3)	1.2 (1.2)	0.0 (**)	0.6 (0.3)	1.4 (0.5)	
O4-O6	0.0 (**)	0.0 (**) +	+	0.5 (0.5)	0.3 (0.3)	
Total	7.4 (1.1)	10.2 (1.5)	7.5 (0.2)	3.2 (0.7)	7.1 (0.6)	
North Pacific						
E1-E5	7.3 (1.3)	6.4 (0.3)	12.1 (3.0)	3.9 (0.3)	7.5 (0.9)	
E6-E9	0.7 (0.4)	0.5 (0.5)	1.2 (0.3)	0.0 (**) +	0.6 (0.2)	
O1-O3	1.7 (1.7)	1.8 (1.7)	5.0 (4.9)	2.5 (1.4)	2.5 (1.2)	
O4-O6	0.0 (**) +	0.0 (**) +	+	0.0 (**) +	0.0 (**) +	
Total	5.4 (1.2)	4.7 (0.2)	9.9 (2.5)	2.9 (0.3)	5.7 (0.7)	
Other Pacific						
E1-E5	13.4 (1.9)	11.7 (3.1)	7.9 (1.5)	5.2 (2.0)	9.9 (1.5)	
E6-E9	0.9 (0.7)	1.2 (0.6)	0.0 (**) +	0.5 (0.4)	0.8 (0.3)	
O1-O3	0.0 (**) +	0.8 (0.8)	0.0 (**) +	0.0 (**) +	0.3 (0.3)	
O4-O6	0.0 (**) +	0.7 (0.8)	+	1.5 (0.7)	0.7 (0.5)	
Total	8.4 (2.7)	8.1 (1.9)	6.6 (1.0)	3.4 (1.0)	6.8 (1.0)	
Europe						
E1-E5	9.4 (1.0)	4.6 (1.5)	2.6 (4.0)	3.3 (0.5)	7.8 (0.8)	
E6-E9	0.9 (0.5)	2.4 (0.6)	+	0.0 (**) +	0.7 (0.3)	
O1-O3	1.8 (1.3)	0.0 (**) +	+	0.0 (**) +	1.1 (0.8)	
O4-O6	4.1 (3.9)	0.0 (**) +	+	0.0 (**) +	1.3 (1.3)	
Total	7.5 (0.9)	3.2 (0.4)	1.7 (2.8)	2.2 (0.4)	6.0 (0.6)	
Total Worldwide						
E1-E5	9.9 (1.0)	12.8 (1.6)	9.6 (0.6)	4.7 (0.7)	9.4 (0.6)	
E6-E9	0.8 (0.3)	0.9 (0.3)	1.1 (1.0)	0.2 (0.2)	0.6 (0.1)	
W1-W4 ^a	0.0 (**) +	0.0 (**) +	+	+	0.1 (0.1)	
O1-O3	2.8 (1.0)	1.1 (1.0)	0.5 (0.5)	0.6 (0.3)	1.4 (0.4)	
O4-O6	0.6 (0.6)	0.1 (0.1)	0.0 (**) +	0.5 (0.4)	0.4 (0.3)	
Total	7.3 (0.8)	9.7 (1.3)	7.7 (0.3)	3.0 (0.5)	6.8 (0.5)	

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

+ Less than 20 respondents.

**Informative standard error not available.

Table G.7. Amphetamine or Other Stimulant Use During the Past 30 Days

Region/Pay Grade	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
Americas					
E1-E5	6.9 (1.4)	7.3 (1.4)	9.0 (0.9)	3.0 (0.4)	6.3 (0.6)
E6-E9	1.2 (0.3)	0.3 (0.3)	0.0 (**)	0.5 (0.3)	0.6 (0.2)
O1-O3	1.6 (0.8)	1.2 (1.2)	0.0 (**) +	0.3 (0.3)	0.8 (0.4)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
Total	5.1 (1.0)	5.6 (1.1)	7.1 (0.2)	2.0 (0.3)	4.5 (0.5)
North Pacific					
E1-E5	7.4 (0.7)	4.2 (0.9)	5.2 (0.6)	3.2 (0.1)	5.2 (0.3)
E6-E9	1.2 (0.3)	0.5 (0.5)	0.6 (0.5)	0.0 (**) +	0.6 (0.2)
O1-O3	0.8 (0.9)	0.0 (**) +	2.7 (2.6)	0.0 (**) +	0.8 (0.6)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
Total	5.5 (0.4)	3.0 (0.7)	4.3 (0.5)	2.3 (0.1)	3.9 (0.2)
Other Pacific					
E1-E5	6.0 (0.3)	3.9 (0.5)	5.5 (0.9)	3.1 (0.8)	4.4 (0.2)
E6-E9	0.0 (**) +	0.2 (0.2)	0.0 (**) +	0.6 (0.5)	0.2 (0.2)
O1-O3	3.8 (3.6)	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.6 (0.6)
O4-O6	0.0 (**) +	0.7 (0.8)	0.0 (**) +	0.0 (**) +	0.2 (0.2)
Total	3.9 (0.8)	2.6 (0.3)	4.6 (0.2)	2.0 (0.8)	3.0 (0.3)
Europe					
E1-E5	8.1 (0.9)	2.0 (0.9)	0.0 (**) +	1.2 (0.3)	6.3 (0.7)
E6-E9	0.7 (0.3)	0.9 (0.9)	0.0 (**) +	0.4 (0.4)	0.6 (0.2)
O1-O3	1.2 (1.2)	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.7 (0.8)
O4-O6	4.1 (3.9)	0.0 (**) +	0.0 (**) +	0.0 (**) +	1.3 (1.3)
Total	6.5 (0.7)	1.3 (0.6)	0.0 (**) +	0.9 (0.3)	4.8 (0.5)
Total Worldwide					
E1-E5	7.3 (0.9)	7.0 (1.3)	8.2 (0.6)	2.8 (0.3)	6.2 (0.5)
E6-E9	1.0 (0.2)	0.3 (0.3)	0.1 (0.1)	0.4 (0.2)	0.6 (0.1)
W1-W4 ^a	0.8 (0.9)	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.7 (0.7)
O1-O3	1.5 (0.6)	1.0 (1.0)	0.3 (0.3)	0.3 (0.3)	0.8 (0.3)
O4-O6	0.6 (0.6)	0.1 (0.1)	0.0 (**) +	0.0 (**) +	0.1 (0.1)
Total	5.5 (0.7)	5.3 (1.0)	6.5 (0.2)	1.8 (0.2)	4.5 (0.4)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

+ Less than 20 respondents.

** Informative standard error not available.

Table G.9. Tranquilizer Use During The Past 30 Days

Region/Pay Grade	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
Americas					
E1-E5	1.9 (0.5)	1.6 (0.3)	1.5 (0.1)	0.8 (0.2)	1.5 (0.2)
E6-E9	0.4 (0.3)	0.0 (**)	1.2 (1.2)	0.0 (**)	0.2 (0.1)
O1-O3	0.0 (**)	0.0 (**)	0.0 (**) +	0.3 (0.3)	0.1 (0.1)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
Total	1.4 (0.4)	1.2 (0.3)	1.3 (0.2)	0.5 (0.2)	1.1 (0.2)
North Pacific					
E1-E5	2.5 (0.5)	1.2 (0.6)	1.8 (0.9)	1.0 (0.5)	1.7 (0.3)
E6-E9	0.4 (0.3)	0.5 (0.5)	0.0 (**) +	0.0 (**) +	0.2 (0.2)
O1-O3	1.4 (1.2)	0.0 (**) +	2.7 (2.6)	0.0 (**) +	1.0 (0.7)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
Total	1.9 (0.3)	0.9 (0.5)	1.5 (0.6)	0.7 (0.3)	1.3 (0.2)
Other Pacific					
E1-E5	3.1 (0.7)	1.3 (0.4)	3.2 (0.5)	1.4 (1.2)	2.0 (0.4)
E6-E9	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
O1-O3	0.0 (**) +	0.8 (0.9)	0.0 (**) +	1.3 (1.5)	0.8 (0.6)
O4-O6	0.0 (**) +	0.7 (0.8)	0.0 (**) +	1.5 (0.7)	0.7 (0.5)
Total	1.9 (0.8)	1.0 (0.3)	2.7 (0.5)	1.1 (0.8)	1.4 (0.3)
Europe					
E1-E5	2.4 (0.4)	1.1 (0.1)	0.0 (**) +	0.7 (0.2)	1.9 (0.3)
E6-E9	0.3 (0.2)	0.9 (0.9)	0.0 (**) +	0.4 (0.4)	0.4 (0.2)
O1-O3	1.2 (1.2)	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.7 (0.8)
O4-O6	4.1 (3.9)	0.0 (**) +	0.0 (**) +	0.0 (**) +	1.3 (1.3)
Total	2.0 (0.3)	0.8 (0.1)	0.0 (**) +	0.6 (0.2)	1.6 (0.2)
Total Worldwide					
E1-E5	2.1 (0.3)	1.6 (0.3)	1.6 (0.2)	0.8 (0.2)	1.6 (0.2)
E6-E9	0.4 (0.2)	0.0 (**) +	1.0 (0.9)	0.1 (0.1)	0.2 (0.1)
W1-W4 ^a	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
O1-O3	0.3 (0.3)	0.1 (0.1)	0.3 (0.3)	0.3 (0.3)	0.3 (0.2)
O4-O6	0.6 (0.6)	0.1 (0.1)	0.0 (**) +	0.1 (0.1)	0.2 (0.1)
Total	1.6 (0.3)	1.2 (0.2)	1.4 (0.2)	0.6 (0.2)	1.2 (0.1)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

+ Less than 20 respondents.

** Informative standard error not available.

Table G.10. Tranquilizer Use During the Past 12 Months

Region/Pay Grade	Service					Total (d)
	Army	Navy	Marine Corps	Air Force		
Americas						
E1-E5	3.4 (0.9)	4.7 (0.4)	3.3 (1.0)	1.3 (0.3)		3.3 (0.3)
E6-E9	0.9 (0.3)	0.0 (**)	1.2 (1.2)	0.0 (**)		0.4 (0.1)
O1-O3	0.6 (0.6)	1.2 (1.2)	0.0 (**) +	0.3 (0.3)		0.5 (0.3)
O4-O6	0.0 (**) +	0.0 (**) +	+	0.0 (**) +		0.0 (**) +
Total	2.5 (0.6)	3.6 (0.4)	2.7 (0.8)	0.8 (0.2)		2.4 (0.2)
North Pacific						
E1-E5	4.2 (0.9)	1.8 (-)	4.3 (0.9)	1.6 (0.6)		3.2 (0.4)
E6-E9	0.4 (0.4)	1.1 (-)	0.6 (0.5)	0.0 (**) +		0.4 (0.2)
O1-O3	2.2 (1.1)	0.0 (**) +	2.7 (2.6)	0.0 (**) +		1.3 (0.7)
O4-O6	0.0 (**) +	0.0 (**) +	+	0.0 (**) +		0.9 (0.9)
Total	3.1 (0.7)	1.5 (-)	3.7 (0.5)	1.2 (0.4)		2.5 (0.3)
Other Pacific						
E1-E5	4.4 (1.2)	2.5 (0.3)	5.2 (0.9)	2.1 (1.1)		3.3 (0.4)
E6-E9	0.0 (**) +	0.5 (0.2)	0.0 (**) +	0.0 (**) +		0.2 (0.1)
O1-O3	0.0 (**) +	0.9 (0.9)	0.0 (**) +	1.3 (1.5)		0.8 (0.6)
O4-O6	0.0 (**) +	0.7 (0.8)	+	3.0 (1.5)		1.2 (0.9)
Total	2.7 (1.3)	1.8 (0.2)	4.3 (1.0)	1.7 (0.7)		2.3 (0.4)
Europe						
E1-E5	4.7 (0.7)	1.9 (0.8)	0.0 (**) +	1.6 (0.2)		3.9 (0.5)
E6-E9	0.3 (0.2)	0.9 (0.9)	+	0.4 (0.4)		0.4 (0.2)
O1-O3	2.8 (1.5)	0.0 (**) +	+	0.0 (**) +		1.7 (0.9)
O4-O6	4.1 (3.9)	0.0 (**) +	+	0.0 (**) +		1.3 (1.3)
Total	3.9 (0.5)	1.3 (0.6)	0.0 (**) +	1.2 (0.2)		3.1 (0.3)
Total Worldwide						
E1-E5	3.9 (0.6)	4.5 (0.4)	3.5 (0.8)	1.4 (0.2)		3.4 (0.2)
E6-E9	0.7 (0.2)	0.1 (-)	1.0 (0.9)	0.1 (0.1)		0.4 (0.1)
W1-W4 ^a	0.0 (**) +	0.0 (**) +	+	*		0.0 (**) +
O1-O3	1.1 (0.6)	1.1 (1.0)	0.3 (0.3)	0.3 (0.3)		0.7 (0.3)
O4-O6	0.6 (0.6)	0.1 (0.1)	0.7 (0.7)	0.1 (0.1)		0.2 (0.1)
Total	3.0 (0.4)	3.4 (0.4)	2.9 (0.7)	0.9 (0.2)		2.5 (0.2)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

+ Less than 20 respondents.

** Informative standard error not available.

Table G.11 Barbiturate or Other Sedative Use During the Past 30 Days

Region/Pay Grade	Service					Total DoD
	Army	Navy	Marine Corps	Air Force		
Americas						
E1-E5	1.9 (0.4)	1.5 (0.2)	1.7 (0.3)	1.1 (0.4)		1.5 (0.2)
E6-E9	0.5 (0.3)	0.0 (**)	0.0 (**) +	0.2 (0.2)		0.2 (0.1)
O1-O3	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.3 (0.3)		0.1 (0.1)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +		0.0 (**) +
Total	1.4 (0.3)	1.2 (0.2)	1.3 (0.2)	0.7 (0.3)		1.1 (0.1)
North Pacific						
E1-E5	2.2 (0.8)	1.5 (0.6)	2.0 (0.6)	1.2 (0.2)		1.8 (0.3)
E6-E9	0.0 (**) +	0.0 (**) +	0.6 (0.5)	0.0 (**) +		0.1 (0.1)
O1-O3	0.0 (**) +	0.0 (**) +	2.5 (2.4)	0.0 (**) +		0.5 (0.5)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +		0.0 (**) +
Total	1.5 (0.6)	1.0 (0.4)	1.8 (0.3)	0.8 (0.1)		1.3 (0.2)
Other Pacific						
E1-E5	2.0 (1.0)	0.9 (0.1)	2.1 (0.7)	0.8 (0.3)		1.3 (0.3)
E6-E9	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +		0.0 (**) +
O1-O3	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +		0.0 (**) +
O4-O6	0.0 (**) +	0.7 (0.8)	0.0 (**) +	0.0 (**) +		0.2 (0.2)
Total	1.2 (0.9)	0.7 (0.1)	1.8 (0.1)	0.5 (0.5)		0.9 (0.2)
Europe						
E1-E5	2.7 (0.4)	1.1 (0.5)	0.0 (**) +	0.5 (0.3)		2.1 (0.3)
E6-E9	0.2 (0.2)	0.9 (0.9)	0.0 (**) +	0.0 (**) +		0.2 (0.1)
O1-O3	1.2 (1.2)	0.0 (**) +	0.0 (**) +	0.0 (**) +		0.7 (0.8)
O4-O6	4.1 (3.9)	0.0 (**) +	0.0 (**) +	0.0 (**) +		1.3 (1.3)
Total	2.2 (0.3)	0.8 (0.1)	0.0 (**) +	0.3 (0.2)		1.7 (0.2)
Total Worldwide						
E1-E5	2.1 (0.3)	1.5 (0.1)	1.7 (0.3)	1.0 (0.3)		1.6 (0.1)
E6-E9	0.3 (0.2)	0.0 (**) +	0.1 (0.1)	0.2 (0.2)		0.2 (0.1)
W1-W4 ^a	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +		0.0 (**) +
O1-O3	0.2 (0.2)	0.0 (**) +	0.2 (0.3)	0.3 (0.3)		0.2 (0.1)
O4-O6	0.6 (0.6)	0.1 (0.1)	0.0 (**) +	0.0 (**) +		0.1 (0.1)
Total	1.6 (0.2)	1.1 (0.1)	1.4 (0.1)	0.7 (0.2)		1.2 (0.1)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^a Weighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

+ Less than 20 respondents.

** Informative standard error not available.

Table G.12. Barbiturate or Other Sedative Use During the Past 12 Months

Region/Pay Grade	Service					Total Doll
	Army	Navy	Marine Corps	Air Force		
Americas						
E1-E5	3.8 (0.8)	5.0 (0.3)	3.1 (0.8)	1.6 (0.4)	3.6 (0.3)	
E6-E9	1.2 (0.6)	0.0 (**) (0.3)	0.0 (**) (0.3)	0.2 (0.2)	0.5 (0.2)	
O1-O3	0.6 (0.6)	0.0 (**) (0.3)	0.0 (**) (0.3)	0.3 (0.3)	0.3 (0.2)	
O4-O6	0.0 (**) (0.3)	0.0 (**) (0.3)	0.0 (**) (0.3)	0.0 (0.3)	0.0 (**) (0.3)	
Total	2.9 (0.5)	3.8 (0.3)	2.4 (0.5)	1.1 (0.3)	2.6 (0.2)	
North Pacific						
E1-E5	3.6 (1.3)	2.6 (0.5)	5.8 (1.0)	2.2 (0.3)	3.6 (0.5)	
E6-E9	0.0 (**) (0.3)	0.0 (**) (0.3)	0.6 (0.5)	0.0 (0.3)	0.1 (0.1)	
O1-O3	0.8 (0.9)	0.0 (**) (0.3)	2.7 (2.6)	0.0 (0.3)	0.8 (0.6)	
O4-O6	0.0 (**) (0.3)	0.0 (**) (0.3)	0.0 (0.3)	0.0 (0.3)	0.0 (**) (0.3)	
Total	2.6 (0.9)	1.8 (0.3)	4.7 (0.8)	1.6 (0.2)	2.7 (0.4)	
Other Pacific						
E1-E5	4.1 (2.0)	2.2 (0.4)	4.0 (0.2)	1.9 (1.7)	2.9 (0.6)	
E6-E9	0.0 (**) (0.3)	0.0 (**) (0.3)	0.0 (0.3)	0.0 (0.3)	0.0 (**) (0.3)	
O1-O3	0.0 (**) (0.3)	0.0 (**) (0.3)	0.0 (0.3)	0.0 (0.3)	0.0 (**) (0.3)	
O4-O6	0.0 (**) (0.3)	0.7 (0.8)	0.0 (0.3)	0.0 (0.3)	0.2 (0.2)	
Total	2.5 (1.8)	1.5 (0.3)	3.4 (0.3)	1.2 (1.2)	1.9 (0.5)	
Europe						
E1-E5	5.1 (0.8)	2.0 (0.3)	0.0 (0.3)	1.6 (0.7)	4.2 (0.6)	
E6-E9	0.4 (0.2)	0.9 (0.9)	0.0 (0.3)	0.4 (0.4)	0.4 (0.2)	
O1-O3	2.0 (1.4)	0.0 (**) (0.3)	0.0 (0.3)	0.0 (0.3)	1.2 (0.8)	
O4-O6	4.1 (3.9)	0.0 (**) (0.3)	0.0 (0.3)	0.0 (0.3)	1.3 (1.3)	
Total	4.1 (0.6)	1.3 (0.1)	0.0 (0.3)	1.2 (0.5)	3.3 (0.4)	
Total Worldwide						
E1-E5	4.2 (0.6)	4.7 (0.2)	3.5 (0.7)	1.7 (0.3)	3.7 (0.2)	
E6-E9	0.9 (0.4)	0.0 (**) (0.3)	0.1 (0.1)	0.2 (0.2)	0.4 (0.2)	
W1-W4 ^a	0.0 (**) (0.3)	0.0 (**) (0.3)	0.0 (0.3)	0.0 (0.3)	0.0 (**) (0.3)	
O1-O3	0.9 (0.5)	0.0 (0.3)	0.3 (0.3)	0.3 (0.3)	0.4 (0.2)	
O4-O6	0.6 (0.6)	0.1 (0.1)	0.0 (0.3)	0.0 (0.3)	0.1 (0.1)	
Total	3.2 (0.4)	3.5 (0.3)	2.8 (0.4)	1.1 (0.3)	2.7 (0.2)	

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

+ Less than 20 respondents.

** Informative standard error not available.

Table G.13. Heroin Use During the Past 30 Days

Region/Pay Grade	Service				Total Dal
	Army	Navy	Marine Corps	Air Force	
Americas					
E1-E5	0.7 (0.2)	0.7 (0.1)	1.1 (0.3)	0.0 (**)	0.6 (0.1)
E6-E9	0.0 (**)	0.3 (0.3)	0.0 (**)	0.0 (**)	0.1 (0.1)
O1-O3	0.0 (**)	0.0 (**)	0.0 (**)	0.3 (0.3)	0.1 (0.1)
O4-O6	0.0 (**)	0.0 (**)	+	0.0 (**)	0.0 (**)
total	0.5 (0.2)	0.6 (0.1)	0.9 (0.3)	0.0 (**)	0.4 (0.1)
North Pacific					
E1-E5	0.8 (0.3)	0.6 (0.3)	1.0 (0.6)	0.0 (**)	0.6 (0.2)
E6-E9	0.3 (0.3)	0.0 (**)	0.6 (0.5)	0.0 (**)	0.2 (0.2)
O1-O3	0.0 (**)	0.0 (**)	2.7 (2.6)	0.0 (**)	3.5 (0.5)
O4-O6	0.0 (**)	0.0 (**)	+	0.0 (**)	0.0 (**)
total	0.6 (0.3)	0.4 (0.2)	1.0 (0.4)	0.0 (**)	0.5 (0.1)
Other Pacific					
E1-E5	0.8 (0.6)	0.2 (0.1)	0.8 (0.1)	0.6 (0.3)	0.5 (0.1)
E6-E9	0.0 (**)	0.0 (**)	0.0 (**)	0.0 (**)	0.0 (**)
O1-O3	0.0 (**)	0.0 (**)	0.0 (**)	0.0 (**)	0.0 (**)
O4-O6	0.0 (**)	0.7 (0.8)	+	0.0 (**)	0.2 (0.2)
total	0.5 (0.5)	0.1 (0.1)	0.7 (0.1)	0.4 (0.1)	0.3 (0.1)
Europe					
E1-E5	1.7 (0.2)	0.2 (0.2)	0.0 (**)	0.4 (0.2)	1.4 (0.2)
E6-E9	0.2 (0.2)	0.4 (0.4)	+	0.0 (**)	0.1 (0.1)
O1-O3	1.2 (1.2)	0.0 (**)	+	0.0 (**)	0.7 (0.8)
O4-O6	4.1 (3.9)	0.0 (**)	+	0.0 (**)	1.3 (1.3)
total	1.5 (0.2)	0.2 (-)	0.0 (**)	0.3 (0.2)	1.1 (0.1)
total Worldwide					
E1-E5	1.1 (0.2)	0.7 (0.1)	1.1 (0.2)	0.1 (-)	0.7 (0.1)
E6-E9	0.1 (-)	0.3 (0.3)	0.1 (0.1)	0.0 (-)	0.1 (0.1)
W1-W4 ^a	0.0 (**)	0.0 (**)	+	*	0.0 (**)
O1-O3	0.2 (0.2)	0.0 (**)	0.3 (0.3)	0.3 (0.3)	0.2 (0.1)
O4-O6	0.6 (0.6)	0.1 (0.1)	0.0 (**)	0.0 (**)	0.1 (0.1)
Total	0.8 (0.1)	0.5 (0.1)	0.9 (0.2)	0.1 (-)	0.5 (0.1)

Note: Tabulated values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

+ Less than 20 respondents.

** Informative standard error not available.

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was then partitioned into the number of days on which atypical high consumption occurred, D, according to the frequency codes in Table 2, and the number of typical days, 365F minus the number of atypical days. If the respondent typically consumed eight or more drinks of the given beverage--i.e., had a Qn greater than or equal to 5--the number of atypical days for that beverage was 0. If the number of atypical days was greater than or equal to the number of typical days, the term 365F - D was set to 0. Each number of days was then multiplied by the ounces of ethanol consumed on such days; i.e., 5 for atypical days and the typical quantity Qn for typical days. These products were then summed and divided by 365. The resulting composite estimates mean daily volume for the given beverage. The formula may be written as:

$$AQnF = \frac{5D + Qn(365F-D)}{365}$$

where

AQnF is the average daily volume of ethanol consumed in the form of the given beverage.

D is the number of atypical high consumption days for the given beverage (0 if Qn is greater than or equal to 5 for the given beverage).

Qn is the volume of ethanol consumed on typical drinking days for the given beverage.

F is the probability of consuming the given beverage on a given day.

The composite volume measures for the three beverages were then summed to equal the total average daily volume measure. In so doing, the following constraints were applied: (1) persons indicating no consumption of alcoholic beverages during the past year (Q. 65) were given scores of 0 on the composite indices (for each beverage) and on the total volume measure; (2) the composite and total volume measures were not computed for individuals for whom typical volume could not be computed; and (3) the maximum value permitted for the composite and total volume measures was 30 ounces of ethanol per day.

of heavier drinking have a considerable impact on the individual's mean daily volume. Moreover, estimates of mean daily volume in the total population will be incomplete if they ignore the episodic consumption of such individuals. In light of the importance of accounting for the volume of alcohol consumed on atypical days, the frequency of consuming eight or more cans, glasses, or drinks of beer, wine, or hard liquor in the last year (Q. 35, 36 and 37) was measured. Because the intention was to measure episodic behavior, the frequency questions pertain to the past year (rather than the past 30 days, used to measure typical consumption). The quantity of ethanol consumed on such days was coded as 5 ounces (i.e., 10 cans, glasses, or drinks, each containing .5 ounces of ethanol). The response alternatives and corresponding frequency codes for these questions are listed in Table H.2. The sum of these three frequency codes (beer, wine, and hard liquor) constitute the measure of the "frequency of heavy drinking," (i.e., days of atypical high consumption).

Table H.2. Frequency Codes for Atypical High Consumption Days

Response Alternative ^a	Frequency Code (D)	Method of Calculation
About every day	338	6.5 x 52
5-6 days a week	286	5.5 x 52
3-4 days a week	182	3.5 x 52
1-2 days a week	78	1.5 x 52
2-3 days a month	30	2.5 x 12
About once a month	12	12
7-11 days in the past 12 months	9	9
3-6 days in the past 12 months	4.5	4.5
Once or twice in the past 12 months	1.5	1.5
Never in the past 12 months	0	0

^aFrequency of atypical high consumption days for given beverage during past year.

The volumes resulting from typical and atypical consumption days were combined in a straightforward manner. For each beverage, the number of days during the past year on which the beverage is consumed was estimated by multiplying the likelihood of consuming it on a given day (F) by 365. This number

ounces (standard wine glass). Two additional questionnaire items were employed to account for variations in the size of beer containers and strength of drinks containing hard liquor (Q. 21, 27). The respondent indicated the size can or bottle of beer he/she usually drinks (Q. 21), with alternatives of 8, 12, or 16 ounce containers, and the number of ounces of hard liquor in his average drink (Q. 27), with alternatives of 1, 1.5, 2, 3, 4, and 5 or more (coded as 5) ounces. Missing responses for beer were coded as 12 ounces and for liquor as one ounce.

Using the measures described in the preceding paragraph, typical quantity for beer and hard liquor was determined by multiplying (1) the number of cans or drinks typically consumed by (2) the number of ounces of the given beverage they contained. Since the standard four-ounce size was used for wine glasses, the typical quantity for wine is simply four times the number of glasses consumed on a typical day when the respondent drank wine. Once typical quantity has been determined for each beverage, it is multiplied by the frequency code of drinking that beverage. The resulting product constitutes a measure of the average number of ounces of the given beverage consumed daily as a result of the individual's typical drinking behavior.

The final step in measuring typical volume was to transform the number of ounces of beer, wine, and liquor consumed daily to ounces of ethanol for each beverage. The transformations were made by weighting ounces of beer by .04, wine by .12, and hard liquor or .43. These weights are determined by the standard alcohol content (by volume) of the three beverages. There was one exception to this weighting procedure. Since individuals consuming large quantities of wine on a regular basis often drink fortified wine, a question was included to measure the type of wine usually consumed by the respondent during the past 30 days (i.e., regular or fortified; see Q. 24). If the respondent indicated fortified wine, the weight used for ethanol content was .18 (rather than .12).

The procedures described above measure daily ethanol volume resulting from the individual's typical drinking days. Most persons also experience atypical days on which larger quantities of alcohol are consumed. To the extent that the amounts consumed on those days are close to the individual's typical volume or that the number of atypical days is very small, the impact of such days on daily volume indices is minimal. However, as the quantity of alcohol consumed or the number of atypical days becomes large, these episodes

Average Daily Ethanol Consumption

The average daily ethanol consumption index used in this study measures both the typical drinking pattern of an individual over the past 30 days and the pattern of episodic higher consumption during the past year. Respondents indicating that they have not consumed any alcoholic beverage during the past 30 days (see Q. 65) were assigned a typical volume of 0 ounces of ethanol/day. For the remaining respondents, daily volume is computed separately for beer, wine, and hard liquor, using parallel procedures. The first step in these calculations was to determine the frequency of consuming each beverage during the past 30 days (Q. 20, 23, and 26). Each frequency is computed in terms of the daily probability of consuming the given beverage. The response alternatives and corresponding frequency codes are listed in Table H.1.

Table H.1. Frequency Codes for Typical Drinking Days

Response Alternative ^a	Frequency Code (F)	Method of Calculation
28-30 days (about every day)	0.967	29/30
20-27 days (5-6 days a week, average)	0.786	5.5/7
11-19 days (3-4 days a week, average)	0.500	3.5/7
4-10 days (1-2 days a week, average)	0.214	1.5/7
2-3 days in the past 30 days	0.083	2.5/30
Once in the past 30 days	0.033	1/30
Didn't drink any wine in the past 30 days	0.000	0/30

^aFrequency of consumption of given beverage during past 30 days.

The second step in computing daily volume resulting from typical drinking days was to determine the typical quantity (Qn) of each beverage drunk during the past 30 days on days when the given beverage was consumed (Q. 22, 25 and 28). The codes used for the number of cans of beer, glasses of wine, and drinks of hard liquor are self-apparent for the smaller quantities. For larger quantities, the value used was the mid-point of the indicated range; for example, 9-11 beers was coded as 10 cans. The codes used for the highest quantity are 22 beers, 15 glasses, and 22 drinks, for beer, wine, and hard liquor, respectively. The size of a glass of wine was specified as four

Appendix H

Computation of the Average Daily Ethanol Consumption Index

Table G.18. Other Drug Use During the Past 12 Months

Region/Pay Grade	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
Americas					
E1-E5	5.3 (0.8)	6.9 (0.4)	7.2 (1.4)	4.1 (1.0)	5.7 (0.4)
E6-E9	2.4 (0.4)	1.3 (0.2)	1.2 (1.2)	0.7 (0.3)	1.5 (0.2)
O1-O3	1.1 (0.6)	2.2 (1.1)	4.5 (2.4)	1.6 (0.4)	1.8 (0.4)
O4-O6	0.0 (**)	0.0 (**) *	+	0.5 (0.6)	0.3 (0.3)
Total	4.1 (0.6)	5.5 (0.3)	6.1 (1.3)	2.9 (0.7)	4.4 (0.3)
North Pacific					
E1-E5	7.4 (0.5)	4.8 (0.2)	7.7 (1.1)	3.4 (1.1)	6.0 (0.4)
E6-E9	1.6 (0.7)	2.1 (1.0)	0.6 (0.5)	0.9 (0.4)	1.3 (0.3)
O1-O3	2.3 (1.1)	1.8 (1.8)	8.9 (2.9)	0.0 (**) *	2.8 (0.7)
O4-O6	0.0 (**) *	0.0 (**) *	+	0.0 (**) *	0.0 (**) *
Total	5.6 (0.6)	3.9 (0.2)	6.5 (0.9)	2.6 (0.8)	4.7 (0.4)
Other Pacific					
E1-E5	7.8 (2.6)	4.0 (0.5)	5.9 (1.0)	5.5 (1.6)	5.4 (0.8)
E6-E9	0.9 (0.7)	1.7 (0.8)	0.0 (**) *	1.6 (0.2)	1.4 (0.4)
O1-O3	0.0 (**) *	0.0 (**) *	0.0 (**) *	1.2 (1.1)	0.4 (0.4)
O4-O6	0.0 (**) *	2.4 (1.8)	+	0.0 (**) *	0.7 (0.5)
Total	5.0 (2.5)	3.1 (0.5)	5.0 (1.0)	3.8 (1.3)	3.9 (0.7)
Europe					
E1-E5	8.5 (1.0)	4.0 (0.8)	0.0 (**) *	4.7 (1.1)	7.4 (0.8)
E6-E9	1.6 (0.6)	1.5 (0.5)	+	0.8 (0.5)	1.4 (0.4)
O1-O3	2.7 (1.4)	3.8 (3.3)	+	1.1 (0.8)	2.2 (0.9)
O4-O6	4.1 (3.9)	0.0 (**) *	+	2.1 (2.8)	2.3 (1.8)
Total	7.0 (0.7)	2.9 (0.3)	0.0 (**) *	3.5 (0.8)	5.9 (0.5)
Total Worldwide					
E1-E5	6.5 (0.6)	6.6 (0.4)	7.1 (1.1)	4.2 (0.8)	6.0 (0.3)
E6-E9	2.1 (0.3)	1.4 (0.2)	1.0 (1.0)	0.8 (0.3)	1.4 (0.2)
W1-W4 ^a	0.4 (0.4)	0.0 (**) *	+	+	0.4 (0.4)
O1-O3	1.4 (0.5)	2.1 (1.0)	4.6 (1.9)	1.5 (0.4)	1.8 (0.4)
O4-O6	0.6 (0.6)	0.2 (0.1)	0.0 (**) *	0.6 (0.5)	0.5 (0.3)
Total	5.1 (0.4)	5.3 (0.2)	6.0 (1.0)	3.0 (0.6)	4.6 (0.3)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

+ Less than 20 respondents.

** Informative standard error not available.

Table G.17. Other Drug Use During the Past 30 Days

Region/Pay Grade	Service				Total Doll
	Army	Navy	Marine Corps	Air Force	
Americas					
E1-E5	4.0 (0.7)	3.6 (0.5)	5.5 (1.4)	3.3 (0.7)	3.9 (0.4)
E6-E9	2.1 (0.5)	0.7 (0.3)	0.0 (**)	0.4 (0.3)	1.0 (0.2)
01-03	0.5 (0.4)	1.0 (0.8)	4.5 (2.4)	1.3 (0.6)	1.2 (0.4)
04-06	0.0 (**)	0.0 (**)	+	0.5 (0.6)	0.3 (0.3)
Total	3.2 (0.4)	2.9 (0.4)	4.6 (1.1)	2.3 (0.6)	3.0 (0.3)
North Pacific					
E1-E5	6.1 (0.3)	3.3 (0.6)	4.8 (1.6)	2.5 (1.0)	4.4 (0.5)
E6-E9	1.5 (0.6)	1.6 (0.5)	0.6 (0.5)	0.9 (0.4)	1.1 (0.3)
01-03	1.4 (1.2)	1.6 (1.7)	6.3 (0.5)	0.0 (**)	2.0 (0.5)
04-06	0.0 (**)	0.0 (**)	+	0.0 (**)	0.0 (**)
Total	4.6 (0.4)	2.7 (0.2)	4.1 (1.3)	1.9 (0.7)	3.5 (0.4)
Other Pacific					
E1-E5	6.4 (1.6)	3.0 (0.4)	4.3 (0.1)	4.8 (1.9)	4.3 (0.6)
E6-E9	0.0 (**)	1.2 (0.6)	0.0 (**)	1.1 (0.2)	0.8 (0.3)
01-03	0.0 (**)	0.0 (**)	0.0 (**)	0.0 (**)	0.0 (**)
04-06	0.0 (**)	1.0 (1.0)	+	0.0 (**)	0.3 (0.3)
Total	3.9 (1.8)	2.3 (0.4)	3.7 (0.1)	3.2 (1.6)	3.0 (0.6)
Europe					
E1-E5	6.5 (0.9)	2.3 (0.4)	0.0 (**)	3.8 (0.9)	5.7 (0.7)
E6-E9	1.4 (0.5)	0.9 (0.3)	+	0.8 (0.5)	1.2 (0.3)
01-03	2.0 (1.4)	2.0 (1.7)	+	1.1 (0.8)	1.7 (0.9)
04-06	4.1 (3.9)	0.0 (**)	+	2.1 (2.8)	2.3 (1.8)
Total	5.4 (0.6)	1.7 (0.3)	0.0 (**)	2.9 (0.6)	4.6 (0.5)
Total Worldwide					
E1-E5	5.0 (0.5)	3.5 (0.4)	5.3 (1.1)	3.4 (0.6)	4.2 (0.3)
E6-E9	1.8 (0.3)	0.8 (0.3)	0.1 (0.1)	0.5 (0.2)	1.1 (0.2)
W1-W4 ^a	0.4 (0.4)	0.0 (**)	+	+	0.3 (0.3)
01-03	0.8 (0.4)	1.0 (0.7)	4.4 (2.0)	1.2 (0.5)	1.3 (0.4)
04-06	0.6 (0.6)	0.1 (0.1)	0.0 (**)	0.6 (0.5)	0.5 (0.3)
Total	3.9 (0.3)	2.8 (0.3)	4.4 (0.9)	2.4 (0.5)	3.2 (0.2)

Note: Tabled values are percentages and represent prevalence estimates and standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

+ less than 20 respondents.

** Informative standard error not available.

Table G.16. Other Opiate Use During the Past 12 Months

Region/Pay Grade	Service				Total BuD
	Army	Navy	Marine Corps	Air Force	
Americas					
E1-E5	1.8 (0.7)	2.4 (0.2)	1.9 (0.5)	0.6 (0.2)	1.7 (0.2)
E6-E9	0.2 (0.2)	0.0 (**)	0.0 (**) +	0.0 (**) +	0.1 (0.1)
O1-O3	0.6 (0.6)	0.0 (**) +	0.0 (**) +	0.3 (0.3)	0.3 (0.2)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
Total	1.3 (0.5)	1.8 (0.2)	1.5 (0.3)	0.4 (0.2)	1.2 (0.2)
North Pacific					
E1-E5	3.1 (1.2)	1.9 (0.3)	3.8 (0.2)	0.8 (0.7)	2.5 (0.5)
E6-E9	0.0 (**) +	0.0 (**) +	1.2 (0.3)	0.0 (**) +	0.2 (0.1)
O1-O3	0.8 (0.9)	0.0 (**) +	2.7 (2.6)	0.0 (**) +	0.8 (0.6)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
Total	2.2 (1.0)	1.3 (0.2)	3.3 (0.2)	0.6 (0.5)	1.9 (0.4)
Other Pacific					
E1-E5	2.9 (0.5)	1.0 (0.3)	2.3 (0.2)	0.8 (0.1)	1.5 (0.2)
E6-E9	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
O1-O3	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
O4-O6	0.0 (**) +	0.7 (0.8)	0.0 (**) +	0.0 (**) +	0.2 (0.2)
Total	1.8 (0.7)	0.7 (0.3)	2.0 (0.3)	0.5 (0.2)	1.0 (0.2)
Europe					
E1-E5	3.5 (0.5)	1.5 (1.2)	0.0 (**) +	0.9 (0.2)	2.8 (0.4)
E6-E9	0.0 (**) +	0.4 (0.5)	0.0 (**) +	0.0 (**) +	0.0 (**) +
O1-O3	1.2 (1.2)	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.7 (0.8)
O4-O6	4.1 (3.9)	0.0 (**) +	0.0 (**) +	0.0 (**) +	1.3 (1.3)
Total	2.8 (0.4)	0.9 (0.7)	0.0 (**) +	0.6 (0.2)	2.2 (0.3)
Total Worldwide					
E1-E5	2.4 (0.4)	2.3 (0.2)	2.1 (0.4)	0.7 (0.2)	1.9 (0.2)
E6-E9	0.2 (0.2)	0.0 (**) +	0.2 (0.1)	0.0 (**) +	0.1 (0.1)
W1-W4 ^a	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
O1-O3	0.8 (0.5)	0.0 (**) +	0.3 (0.3)	0.3 (0.3)	0.4 (0.2)
O4-O6	0.6 (0.6)	0.1 (0.1)	0.0 (**) +	0.0 (**) +	0.1 (0.1)
Total	1.8 (0.3)	1.7 (0.2)	1.7 (0.2)	0.5 (0.1)	1.4 (0.1)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

† Less than 20 respondents.

**Informative standard error not available.

Table G.15. Other Opiate Use During the Past 30 Days

Region/Pay Grade	Service				Total DoD
	Army	Navy	Marine Corps	Air Force	
Americas					
E1-E5	1.2 (0.4)	0.8 (0.2)	1.0 (0.1)	0.3 (0.1)	0.8 (0.2)
E6-E9	0.0 (**)	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
O1-O3	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.3 (0.3)	0.1 (0.1)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
Total	0.8 (0.3)	0.6 (0.1)	0.8 (0.1)	0.2 (0.1)	0.6 (0.1)
North Pacific					
E1-E5	1.7 (0.7)	1.2 (0.3)	2.3 (0.3)	0.4 (0.4)	1.4 (0.3)
E6-E9	0.0 (**) +	0.0 (**) +	1.2 (0.3)	0.0 (0.0)	0.2 (0.1)
O1-O3	0.0 (**) +	0.0 (**) +	2.7 (2.6)	0.0 (0.0)	0.5 (0.5)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
Total	1.2 (0.5)	0.8 (0.2)	2.1 (0.2)	0.3 (0.3)	1.1 (0.2)
Other Pacific					
E1-E5	1.8 (0.2)	0.6 (0.2)	1.1 (0.5)	0.6 (0.1)	0.9 (0.1)
E6-E9	0.0 (**) +	0.0 (**) +	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
O1-O3	0.0 (**) +	0.0 (**) +	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
Total	1.1 (0.1)	0.4 (0.2)	1.0 (0.4)	0.4 (0.1)	0.6 (0.1)
Europe					
E1-E5	2.1 (0.4)	0.6 (0.3)	0.0 (0.0)	0.5 (0.2)	1.7 (0.3)
E6-E9	0.0 (**) +	0.4 (0.4)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
O1-O3	1.2 (1.2)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.7 (0.8)
O4-O6	4.1 (3.9)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	1.3 (1.3)
Total	1.7 (0.2)	0.5 (0.2)	0.0 (0.0)	0.3 (0.2)	1.3 (0.2)
Total Worldwide					
E1-E5	1.5 (0.3)	0.8 (0.2)	1.2 (0.1)	0.3 (0.1)	1.0 (0.1)
E6-E9	0.0 (**) +	0.0 (0.0)	0.2 (0.1)	0.0 (0.0)	0.0 (0.0)
W1-W4 ^a	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
O1-O3	0.2 (0.2)	0.0 (0.0)	0.3 (0.3)	0.3 (0.3)	0.2 (0.1)
O4-O6	0.6 (0.6)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.1 (0.1)
Total	1.1 (0.2)	0.6 (0.1)	1.0 (0.1)	0.2 (0.1)	0.7 (0.1)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

+ Less than 20 respondents.

** Informative standard error not available.

Table G. 14. Heroin Use During the Past 12 Months

Region/Pay Grade	Service				Total DoI
	Army	Navy	Marine Corps	Air Force	
Americas					
E1-E5	1.2 (0.4)	1.2 (0.2)	1.6 (0.3)	0.0 (**)	0.9 (0.1)
E6-E9	0.0 (**)	0.3 (0.3)	0.0 (**)	0.0 (**)	0.1 (0.1)
O1-O3	0.0 (**)	0.0 (**)	0.0 (**) +	0.3 (0.3)	0.1 (0.1)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
Total	0.8 (0.3)	0.9 (0.2)	1.2 (0.3)	0.0 (**) +	0.7 (0.1)
North Pacific					
E1-E5	1.3 (0.6)	1.1 (0.2)	1.5 (0.3)	0.0 (**) +	1.0 (0.2)
E6-E9	0.3 (0.3)	0.0 (**) +	0.6 (0.5)	0.0 (**) +	0.2 (0.2)
O1-O3	0.0 (**) +	0.0 (**) +	2.7 (2.6)	0.0 (**) +	0.5 (0.5)
O4-O6	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
Total	1.0 (0.5)	0.8 (0.1)	1.4 (0.3)	0.0 (**) +	0.8 (0.2)
Other Pacific					
E1-E5	1.6 (0.1)	0.5 (0.2)	1.2 (0.5)	0.8 (0.1)	0.9 (0.1)
E6-E9	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
O1-O3	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.0 (**) +
O4-O6	0.0 (**) +	0.7 (0.8)	0.0 (**) +	0.0 (**) +	0.2 (0.2)
Total	1.0 (0.3)	0.4 (0.1)	1.0 (0.4)	0.5 (0.1)	0.6 (0.1)
Europe					
E1-E5	2.9 (0.3)	0.2 (0.2)	0.0 (**) +	0.4 (0.2)	2.2 (0.2)
E6-E9	0.2 (0.2)	0.4 (0.5)	0.0 (**) +	0.0 (**) +	0.1 (0.1)
O1-O3	1.2 (1.2)	0.0 (**) +	0.0 (**) +	0.0 (**) +	0.7 (0.8)
O4-O6	4.1 (3.9)	0.0 (**) +	0.0 (**) +	0.0 (**) +	1.3 (1.3)
Total	2.3 (0.3)	0.2 (0.1)	0.0 (**) +	0.3 (0.2)	1.7 (0.2)
Total Worldwide					
E1-E5	1.7 (0.2)	1.1 (0.2)	1.5 (0.3)	0.1 (0.1)	1.1 (0.1)
E6-E9	0.1 (0.1)	0.3 (0.3)	0.1 (0.1)	0.0 (0.0)	0.1 (0.1)
O1-O3	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
O4-O6	0.2 (0.2)	0.0 (0.0)	0.3 (0.3)	0.3 (0.3)	0.2 (0.1)
Total	0.6 (0.6)	0.1 (0.1)	0.0 (0.0)	0.0 (0.0)	0.1 (0.1)
	1.3 (0.2)	0.9 (0.2)	1.2 (0.3)	0.1 (0.1)	0.8 (0.1)

Note: Tabled values are percentages and represent prevalence estimates with standard errors in parentheses. Regional totals include W1-W4's.

^aWeighting classes for item level nonresponse could not be constructed for 5 cases (1 Army, 1 Navy, 3 Marine Corps).

* Not applicable.

- Estimate rounds to zero.

+ less than 20 respondents.

** Informative standard error not available.

END

FILMED

11-85

DTIC