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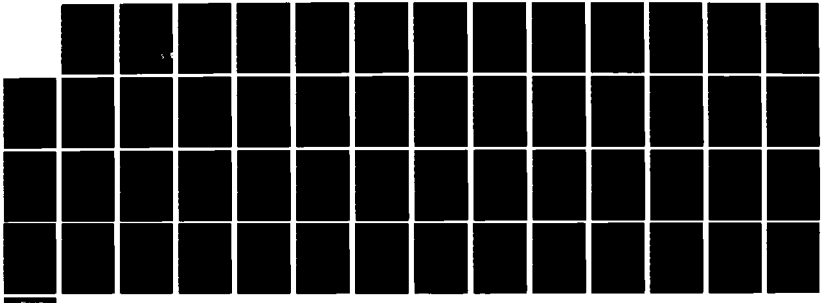

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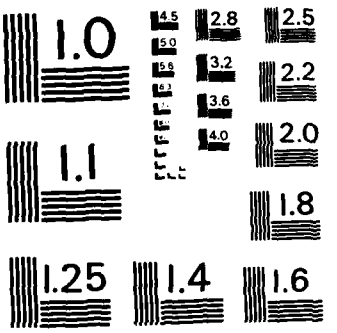

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HIGHLIGHTS FROM THE WORLDWIDE SURVEY ON NONMEDICAL DRUG AND ALCOHOL USE AMONG CIVILIAN PERSONNEL

PREPARED FOR
THE U. S. DEPARTMENT OF DEFENSE
OFFICE OF DRUG AND ALCOHOL ABUSE PREVENTION

UNDER
CONTRACT NO. MDA 903-81-C-0498

FEBRUARY 21, 1983

BY
PROFESSIONAL MANAGEMENT ASSOCIATES, INC.
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PREFACE AND ACKNOWLEDGEMENTS

PREFACE AND ACKNOWLEDGEMENTS

The Office of Drug and Alcohol Abuse Prevention, Health Affairs, of the U. S. Department of Defense contracted with Professional Management Associates, Inc. (PMA) and subcontractor IMS America, Ltd. to conduct the first worldwide survey of nonmedical drug and alcohol use among civilian employees.

This mailout survey was distributed to over 7,000 randomly selected civilian personnel. The questionnaire requested responses to a number of individual drinking and drug use practices, consequences and opinions. The results of the study are to be used by Department of Defense policymakers to evaluate the extent of alcohol and drug use among its employees and to plan improvements in its employee assistance policies and programs.

Organization of the Report

This report is organized into four sections. Following Section 1: Introduction, Sections 2 and 3 discuss the rates of drug and alcohol use. Section 4 reports reasons for not using alcohol and drugs. Appendices A and B contain survey data tables and a technical discussion on the research design and statistical methodology, respectively.

Acknowledgements

A great many people have contributed to the development and implementation of this survey effort. We are grateful for the close cooperation and assistance provided by a number of Department of Defense personnel, consultants, and staff. In particular, special recognition and appreciation must be given to: LTC Fred Schaum, Dr.

John Mazzuchi, Ms. Debbie Ruth, Mr. Robert Stein and Dr. John Allen of the Office of Drug and Alcohol Abuse Prevention (OSD). To the Civilian Personnel Coordinators, we wish to especially thank: Ms. Nancy Cymes, Marine Corps; Ms. Gail McGinn, U. S. Army; Mr. James Lipari, U. S. Navy; Mr. Jake Jacobson, Air Force; Mr. Leonard Pickney, Defense Intelligence Agency who were involved in both pre-test and actual survey activities; Ms. Claire McCrady, Defense Nuclear; Ms. Gaynor Sorrell, Defense Logistics; Mr. Brian Hattery, Defense Investigative; Mr. John Riconda, Defense Contract Audit; Mr. Jim Willis, Defense Mapping; Ms. Betty Hawley, OSD/JCS; and Ms. JanaLee Sponberg, Dependent Schools, for their assistance, without which the survey would not have been successful. To the Unions and their contact persons for their guidance and support: Metal Trades Department, AFL-CIO, Mr. Paul Burnsky; American Federation of Government Employees, Ms. Doris Hildreth; National Federation of Federal Employees, Ms. Robbie Exley; Overseas Education Association, Mr. Jack Rollins; National Association of Government Employees, Mr. Stanley Lyman; and International Association of Machinists and Aerospace Workers, Mr. John Meese.

Also fulfilling an advisory function in the development of the survey instrument were Drs. Lloyd Johnston, Carl Akins, Ira Cisin, Walter Clark, and Ms. Zavaha Doering. Special appreciation to Mr. Michael Dove, Defense Manpower Data Center in Monterey, California for his timeliness and endless assistance. Additionally, to PMA project staff who assisted throughout the survey: Ms. Gail Levine, Ms. Verna Leong, and Ms. Sheila Davis.

Finally, we acknowledge the thousands of employees, whose trust, cooperation and participation time to respond in an efficient manner made this survey possible.

Vivian T. Chen
Project Director

SECTION 1: INTRODUCTION

SECTION 1: INTRODUCTION

Purpose and Rationale

This report presents the results of the first U. S. Department of Defense Worldwide Survey of Alcohol and Drug Use Among Civilian Personnel. It addresses current use of alcohol and drugs (both licit and illicit), consequences of such use on work performance, and reasons for abstaining from or quitting alcohol and drug use.

Major Findings

Alcohol and marijuana/hashish are the two most prevalent drugs used. There was little difference in alcohol and drug prevalence rates among services and agencies, by sex, or geography.

- Approximately eighty-one (81) percent or 729,000 people had used alcohol during the past year
- Approximately sixty-eight (68) percent or 612,000 people have used alcohol within the past thirty days
- The highest current alcohol use occurs among those 26-34 years of age (seventy-seven (77) percent); however, no age category reflected less than sixty-two (62) percent current use.
- Alcohol dependence appears spread evenly over all age groups twenty-six years and older
- Approximately fourteen (14) percent or 126,000 people consume four or more drinks a day, one measure of problem drinking; approximately three (3) percent or 27,000 people consume eight drinks or more a day
- Approximately one (1) percent or 9,000 people exhibit alcohol dependence symptoms at least once a week.
- Approximately six (6) percent or 54,000 people have used marijuana during the past year
- Approximately three (3) percent or 27,000 people have used marijuana within the past thirty days
- The overwhelming current use (ninety-five (95) percent) of marijuana occurs with people under thirty-five years of age

- Health consequences, potential work impairment and lack of desire to experience effects are consistently and frequently reported as important reasons for not using drugs and alcohol; seventy percent or more of the respondents indicated that those were important reasons for not using.

Alcohol and Drug Use in the Work Place

Research on the prevalence and consequences of substance abuse is generally of a case-study nature. It typically discusses only alcohol abuse and then only such abuse in single industries. Broader surveys of general civilian populations have been infrequent. One of the most comprehensive surveys of drug use in industry (National Institute on Drug Abuse, 1977) was conducted in 1973-74 and indicated high rates of marijuana/hashish use among younger work populations. A more recent, unpublished, study of all Federal civilian employees notes that blue collar workers tended to be involved more with illicit drugs, especially marijuana/hashish, than other groups; that middle and upper level (supervisor and white collar) employees were more likely to abuse prescription drugs, often in combination with alcohol; women were more likely to misuse prescription drugs; and professional workers abuse drugs at far higher rates than previous studies had reported. (National Institute on Drug Abuse, Drug Use in Industry, Rockville, Maryland, 1979)

Because of the lack of direct data on the extent of alcohol and drug use among the work force at large, attempts have been made to at least estimate the impact of such use. The White House, the National Institute on Alcohol Abuse and Alcoholism, and the National Institute on Drug Abuse have periodically attempted to gauge adverse consequences on the work place by estimating the direct and indirect costs of abuse including lost productivity, illness, disease and crime

DRUG USE/TYPE PERIOD	TOTAL DOD	PAY GRADE: GS 1-4	GS 5-9	GS 10-12	GS 13-15	GS/GM 16-18	WG 1-4	WG 5-7	WG 8-11	WG 12-15	WS
ANY DRUG USE											
@ PAST THIRTY DAYS	4	8	4	2	3	3	10	7	6	8	0
PAST TWELVE MONTH	7	15	7	4	4	3	16	12	9	11	2
MARIJUANA HASHISH											
@ PAST THIRTY DAYS	3	7	3	1		0	8	7	5	5	0
PAST TWELVE MONTHS	6	13	7	3	1	0	13	12	8	11	0
PCP											
@ PAST THIRTY DAYS	0	0	0	0	0	0	0	0	0	0	0
PAST TWELVE MONTH	0	0	0	0	0	0	0	0	0	0	0
LSD											
@ PAST THIRTY DAYS	0	0	0	0	0	0	0	0	0	0	0
PAST TWELVE MONTHS	0	1	0	0	0	0	0	0	0	0	0
COCAINE											
@ PAST THIRTY DAYS	0	0	1	0	0	0	0	1	1	0	0
PAST TWELVE MONTHS	2	3	1	1	0	0	5	2	3	0	0
AMPHETAMINES OTHER STIMULANTS											
@ PAST THIRTY DAYS	1	1	1	0	0	0	0	2	1	0	0
PAST TWELVE MONTHS	1	2	1	1	0	0	4	4	2	0	0
TRANQUILIZERS											
@ PAST THIRTY DAYS	0	2	0	0	0	0	0	0	0	0	0
PAST TWELVE MONTHS	1	4	0	1	0	0	1	1	1	0	0
BARBITURATES AND OTHER SEDATIVES											
@ PAST THIRTY DAYS	0	0	0	0	3	0	0	0	0	0	0
PAST TWELVE MONTHS	1	1	0	1	3	0	0	1	1	0	0
HEROIN											
@ PAST THIRTY DAYS	0	0	0	0	0	0	0	0	0	0	0
PAST TWELVE MONTHS	0	0	0	0	0	0	0	0	0	0	0
OTHER OPIATES											
@ PAST THIRTY DAYS	0	0	0	0	0	0	0	0	0	0	0
PAST TWELVE MONTHS	0	1	0	0	0	0	0	0	0	0	0
OTHER DRUGS											
@ PAST THIRTY DAYS	0	0	0	0	0	3	2	1	0	0	0
PAST TWELVE MONTHS	1	1	0	1	0	3	2	2	0	0	2

** AMONG DOD CIVILIAN EMPLOYEES

SAMPLE STATEMENT--WITHIN THE PAST (TIME PERIOD), % OF THE CIVILIAN PERSONNEL IN PAY GRADE(S) HAVE USED (DRUG) AT LEAST ONCE. EXAMPLE--"WITHIN THE PAST THIRTY DAYS, 8% OF THE CIVILIAN PERSONNEL IN PAY GRADES GS 1-4 HAVE USED "ANY DRUG" AT LEAST ONCE.

TABLE 1

DRUG USE BY SERVICE GROUP (PERCENTAGE) **

DRUG TYPE/USE PERIOD	TOTAL DOD	SERVICE					
		ARMY	NAVY	MARINE CORPS	AIR FORCE	DLA	OTHER DOD
ANY DRUG USE							
● PAST THIRTY DAYS	4	4	5	2	3	5	5
○ PAST TWELVE MONTHS	7	9	8	7	6	9	8
MARIJUANA HASHISH							
● PAST THIRTY DAYS	3	4	4	2	3	4	5
○ PAST TWELVE MONTHS	6	7	7	5	5	9	7
PCP							
● PAST THIRTY DAYS	0	0	0	0	0	0	0
○ PAST TWELVE MONTHS	0	0	0	0	0	0	0
LSD OTHER HALLUCINOGENS							
● PAST THIRTY DAYS	0	0	0	0	0	0	0
○ PAST TWELVE MONTHS	0	0	0	0	0	0	0
COCAINE							
● PAST THIRTY DAYS	0	0	1	0	0	1	0
○ PAST TWELVE MONTHS	2	1	3	2	1	2	1
AMPHETAMINES OTHER STIMULANTS							
● PAST THIRTY DAYS	1	1	1	1	0	0	0
○ PAST TWELVE MONTHS	1	2	2	2	1	1	1
TRANQUILIZERS							
● PAST THIRTY DAYS	0	1	0	1	0	1	0
○ PAST TWELVE MONTHS	1	2	0	1	1	1	1
BARBITURATES AND OTHER SEDATIVES							
● PAST THIRTY DAYS	0	0	0	0	0	0	0
○ PAST TWELVE MONTHS	1	0	0	0	1	1	1
HEROIN							
● PAST THIRTY DAYS	0	0	0	0	0	0	0
○ PAST TWELVE MONTHS	0	0	0	0	0	0	0
OTHER OPIATES							
● PAST THIRTY DAYS	0	0	0	0	0	0	0
○ PAST TWELVE MONTHS	0	0	0	0	0	0	0
OTHER DRUGS							
● PAST THIRTY DAYS	0	0	0	0	0	1	0
○ PAST TWELVE MONTHS	1	1	1	1	0	1	1
	(n=4935)	(n=1032)	(n=1054)	(n=734)	(n=1024)	(n=550)	(n=541)

** AMONG DOD CIVILIAN EMPLOYEES

SAMPLE STATEMENT--WITHIN THE PAST (TIME PERIOD), % OF THE (SERVICE) CIVILIAN PERSONNEL HAVE USED (DRUG) AT LEAST ONCE. EXAMPLE--"WITHIN THE PAST THIRTY DAYS, 4% OF THE ARMY CIVILIAN PERSONNEL HAVE USED MARIJUANA/HASHISH AT LEAST ONCE."

APPENDIX A: TABLES 1-19

alcohol use, and disapproval of friends in the case of alcohol use were of "no importance" to fifty (50) percent or more of the respondents, whether male or female.

The implications of these responses, while speculative, bear additional attention. For example, the fact that eighty-six (86) percent of the alcohol respondents and ninety-two (92) percent of the drug respondents indicated that health consequences were of at least some importance in not using these substances suggests that themes and messages which promote "healthiness" are likely to be accepted and responded to by the sample population. Similarly, themes which promote pride of work or responsibility on the job are likely to receive similar acceptance. Conversely, negative themes which admonish use because of the "bad experience," medical restriction or the disapproval of friends are likely not to be well received. At a minimum, these responses should begin to identify strong positive and negative themes which can then be promoted or excluded. To the degree that there are significant differences between the reasons for not using alcohol and drugs, or between the sexes, these can be further incorporated into prevention, intervention or health promotion plans. This area warrants additional scrutiny.

SECTION 4: REASONS FOR NOT USING ALCOHOL AND DRUGS

The survey provided an opportunity to gain insight into reasons for not using alcohol and drugs. The respondents were asked to identify those factors which formed the basis for not drinking alcohol and using drugs. In the case of drug use, two types of abstainers (those who have used drugs but currently do not and total abstainers) were asked reasons for non-drug use. These responses can be helpful to those who are interested in prevention and early intervention activities.

Based on the survey responses (see Tables 11 through 19, Appendix A), fear of health consequences, lack of desire to experience the effects of alcohol and drugs, and potential work impairment consistently were reported as being important reasons for non-use. While there were factor differences in rank and frequency between alcohol and drugs, and between men and women, these three factors remained consistently important throughout the responses.

The illegal nature of drugs, religious beliefs and approval of the spouse also were commonly reported as reasons for not using alcohol or drugs; however, the ranking and frequency of these reasons were consistently lower than the factors of health, work impairment, and lack of desire to experience effects. Interestingly, the disapproval of friends which is often thought to be an important factor was reported to be of marginal importance regarding alcohol use and of modest importance regarding drug use.

Clearly though, certain reasons were reported as being much less important. The cost of drugs, the difficulty of acquiring drugs, bad experiences after using alcohol and drugs, medical restrictions to

SECTION 4: REASONS FOR NOT USING ALCOHOL AND DRUGS

Quantity of Alcohol Consumed on an Average Drinking Day and Heavy Drinking

Table 9 gives the distribution of quantity of drinks on an average drinking day in the past thirty days for each service group. A drink in this context can be a mixed drink, glass of wine or bottle of beer. For purposes of this survey, heavy drinking is defined as four or more drinks per day.

Table 9 shows that it is estimated that fourteen (14) percent of all DoD civilian workers can be classified as "heavy drinkers" on an average day in the past thirty days. From this table, it is seen that this pattern is generally present for all six service groups in the study.

Alcohol Dependence

"Alcohol dependent" is defined as a person who, during the preceeding twelve month period, experienced one or more of the following symptoms at least once a week: 1) blackout (loss of memory), 2) shaking (tremors), 3) impaired control, and 4) morning drinking.

Using this index, one (1) percent of the total DoD respondents for three age categories (26-34, 35-49, 50 and over) combined, or approximately 9,000 civilian personnel, is identified as alcohol dependent.

When looking at individual services, however, the patterns of dependence indicate slight differences. For instance, four (4) percent of the Marine Corps civilian personnel between the ages 35-49 indicate some alcohol dependence. Similarly, two (2) percent of the Marine Corps and Air Force respondents between the ages of 26-34 and three (3) percent of the DLA respondents between the ages of 25 and less frequently admitted alcohol dependence.

SECTION 3: MAIN FINDINGS OF ALCOHOL USE

Prevalence of Alcohol Use

Most civilian personnel drink occasionally. The percentage of the population which reported drinking alcohol during the past year (annual prevalence) is shown on Tables 6 and 8. Respondents were asked to describe their total alcohol intake using the following drink equivalents for various beverages:

1 drink of beer = 12 oz. can, 12 oz. botttle, or 12 oz. glass

1 drink of wine = 1 wine glass (4 oz.)

1 drink of hard liquor = 1 1/2 oz. or a shot (an average bar drink)

Approximately eighty-one (81) percent of the respondents drank alcohol at least once during the past year. These tables reflect expected high levels of annual prevalence which are generally consistent with those of the general population. Approximately sixty-eight (68) percent of the respondents consumed alcohol at least once in the past thirty days. These prevalence data are remarkably similar across military departments and agencies. Such rates are comparable to non-governmental civilian rates reported by the National Institute on Alcohol Abuse and Alcoholism (Clark et al, Report on 1979 National Survey, NTIS, Springfield, Virginia, 1981) and the National Institute on Drug Abuse (National Household Survey on Drug Abuse, Rockville, Maryland, 1979).

Two measures of "problem drinking" may be seen in Tables 9 and 10. In the first instance (Table 9), "heavy drinking" is defined as the consumption of four or more drinks in a single day, and in the second (Table 10), reporting at least one symptom of alcohol dependence.

SECTION 3: MAIN FINDINGS OF ALCOHOL USE

(WG) Systems, the use of any drug and marijuana/hashish diminishes as grade levels increase. This is the case for both reported use in the past thirty days and use in the past twelve months. The reported use in the lower grades (1-4) for any drug use and marijuana/hashish is generally twice the amount reported across all respondents. This is true for both use in the past thirty days and the past twelve months. The low grades also reported higher use of other drugs which is higher than DoD-wide patterns.

In Table 3, a rather pronounced relationship between reported drug use and age is revealed. For the use of any drug, those twenty-five years of age or younger reported usage rates over three (3) times the overall DoD rates (thirteen (13) percent in the past thirty days and twenty-six (26) percent in the past twelve months). In relation to marijuana/hashish, the reported use in the youngest group is almost four (4) times the DoD rates for both time periods (eleven (11) percent in the past thirty days and twenty-three (23) percent in the past twelve months). Relative to any drug use and marijuana/hashish use, the foregoing patterns are observed for the age group 26-34 years but fall off sharply in the two older groups to virtually no use at all in the older age group (fifty and over). This age-related use pattern, to a lesser degree, also holds for other drugs reported in the survey.

As seen in Table 4, there is little variation in reported drug use across locations. Within this general similarity, DoD civilians working in Europe did, however, report a slightly lower use pattern for any drug (two (2) percent in past thirty days and five (5) percent in the past twelve months) and marijuana/hashish (two (2) percent in past thirty days and four (4) percent in the past twelve months).

SECTION 2: PREVALENCE OF NONMEDICAL DRUG USE

Ten drugs or drug classes were considered by the survey. These drug types were: Marijuana or Hashish; PCP; LSD, Other Hallucinogens; Cocaine; Amphetamines, Other Stimulants; Tranquilizers; Barbiturates and Other Sedatives; Heroin; Other Opiates; and Other Drugs.

Table 1 shows that four (4) percent of the civilian employees at the Department of Defense reported that they used some type of drug for nonmedical purposes within the past thirty days. When the period of prevalence is extended to the past twelve months, seven (7) percent report the use of any type of drug. Drug use in the past thirty days is seen as a measure of current prevalence whereas use in the past twelve months encompasses not only current use but also use which has ceased or else become less common.

The data in Table 1 also show that marijuana/hashish is the principle drug of use among DoD civilians with three (3) percent of the respondents reporting marijuana/hashish use in the past thirty days and six (6) percent in the past twelve months. No other drugs were reported in any appreciable degree for thirty day or twelve month prevalence. All other drugs were reported at a rate of one (1) percent or less during the past thirty days. The same is true of use in the past twelve months with the exception of cocaine which two (2) percent of the respondents report having used. Reported drug use in relation to service (Table 1) exhibited no substantial variation from the DoD-wide usage patterns.

Table 2 shows that drug use is, to some degree, related to pay grade, although it is likely to be a manifestation of age as reflected in pay grades. Within the General Schedule (GS) and the Wage Grade

SECTION 2: PREVALENCE OF NONMEDICAL DRUG USE

additional cautions must be added at the outset: not all symptoms or consequences of alcohol and drug use are measured; in addition, certain "rare behaviors" such as heroin use are very difficult to measure through a survey because of their infrequency, and consequently, their use may not be reflected accurately. The more frequently the behavior is found, the more likely the accuracy of the sample. If there is a bias to the data reported, it is likely to be an <u>under-reporting</u> of data and the results of this survey should be viewed as a data base below which actual behavior would not occur.

Finally, the reader should be careful to place these results in perspective in terms of actual responses. One or two percent of a population may not appear to be very large, and from one perspective--as contrasted to the remainder of the population--it may not be. However, in terms of actual respondents, these numbers take on significant, if not critical, importance. For example, a "two percent" response within the DoD civilian work force means that approximately 18,000 people (one (1) percent = 9,000 people) are manifesting that particular behavior or attitude. In terms of certain behaviors, for example daily, intensive alcohol or marijuana/hashish use, this is a significant number to warrant current levels of concern by senior management. While not likely to suggest problems of a "crisis" proportion, it suggests problem behavior to which management should be attentive and responsive.

(Research Triangle Institute, Economic Costs to Society of Alcohol and Mental Illness, Research Triangle Park, North Carolina, 1977).

Department of Defense Efforts

Since 1970, surveys have been conducted to assess levels of alcohol and drug use by military personnel. The 1980 and 1982 worldwide military surveys provide valuable data not only on current alcohol and drug prevalence among all service members but also offer a basis for consistent comparison of abuse trends over time.

Similar efforts concerning DoD civilian personnel have been much more limited. One of the more recent large-scale studies is the 1979 Air Force study of prevalence of alcoholism and related alcohol problems among USAF civilian personnel. Prior to the current effort, the Department of Defense has not as a whole systematically administered a worldwide alcohol and drug survey to its civilian personnel. The current project permits estimates of existing use patterns of alcohol and drugs and provides data which serve as a baseline for future findings in surveys by the Department of Defense, military departments, or operating agencies.

Cautions in Interpreting Results

The survey results in this report reflect "best estimates" of results which would occur if the entire civilian employee work force of the Department of Defense had been surveyed. The sample has been designed to provide a ninety-five percent confidence interval plus or minus five percent, which means that is likely (probable), but not certain that the behavior/ attitudes reported would fall close to the actual behavior or attitudes of the population sampled. However, two

TABLE 1

DRUG USE BY AGE (PERCENTAGE) **

DRUG USE/TYPE - PERIOD	TOTAL DOD	AGE CATEGORY			
		25 AND UNDER	26-34	35-49	50 AND OVER
ANY DRUG USE	4	13	12	1	0
● PAST THIRTY DAYS	7	26	20	4	0
○ PAST TWELVE MONTHS					
MARIJUANA/HASHISH	3	11	11	1	0
● PAST THIRTY DAYS	6	23	17	3	0
○ PAST TWELVE MONTHS					
PCP	0	0	0	0	0
● PAST THIRTY DAYS	0	0	0	0	0
○ PAST TWELVE MONTHS					
LSD OTHER HALLUCINOGENS	0	0	0	0	0
● PAST THIRTY DAYS	0	1	0	0	0
○ PAST TWELVE MONTHS					
COCAINE	0	1	2	0	0
● PAST THIRTY DAYS	2	7	4	0	0
○ PAST TWELVE MONTHS					
AMPHETAMINES OTHER STIMULANTS	1	3	2	0	0
● PAST THIRTY DAYS	1	6	4	0	0
○ PAST TWELVE MONTHS					
TRANQUILIZERS	0	1	1	0	0
● PAST THIRTY DAYS	1	3	3	1	0
○ PAST TWELVE MONTHS					
BARBITURATES AND OTHER SEDATIVES	0	0	0	0	0
● PAST THIRTY DAYS	1	2	1	1	0
○ PAST TWELVE MONTHS					
HEROIN	0	0	0	0	0
● PAST THIRTY DAYS	0	0	0	0	0
○ PAST TWELVE MONTHS					
OTHER OPIATES	0	1	0	0	0
● PAST THIRTY DAYS	0	2	0	0	0
○ PAST TWELVE MONTHS					
OTHER DRUGS	0	0	1	0	0
● PAST THIRTY DAYS	1	1	1	0	0
○ PAST TWELVE MONTHS					
	(n=4954)	(n=285)	(n=1128)	(n=1959)	(n=1582)

** AMONG DOD CIVILIAN EMPLOYEES

SAMPLE STATEMENT--WITHIN THE PAST (TIME PERIOD), ___ % OF THE CIVILIAN PERSONNEL BETWEEN THE AGES (AGE CATEGORY) HAVE USED (DRUG) AT LEAST ONCE. EXAMPLE--"WITHIN THE PAST THIRTY DAYS, 11% OF THE CIVILIAN PERSONNEL BETWEEN THE AGES 25 AND UNDER HAVE USED MARIJUANA/HASHISH AT LEAST ONCE."

TABLE 4

DRUG USE BY GEOGRAPHIC LOCATION (PERCENTAGE) **

DRUG USE/TYPE PERIOD	TOTAL DOD	GEOGRAPHIC LOCATION			
		CONUS	EUROPE	PACIFIC	OTHER LOCATIONS
ANY DRUG USE					
● PAST THIRTY DAYS	4	4	2	5	5
□ PAST TWELVE MONTHS	7	8	5	9	8
MARIJUANA/HASHISH					
● PAST THIRTY DAYS	3	3	2	4	5
□ PAST TWELVE MONTHS	6	7	4	8	7
PCP					
● PAST THIRTY DAYS	0	0	0	0	0
□ PAST TWELVE MONTHS	0	0	0	0	0
LSD OTHER HALLUCINOGENS					
● PAST THIRTY DAYS	0	0	0	0	0
□ PAST TWELVE MONTHS	0	0	0	0	0
COCAINE					
● PAST THIRTY DAYS	0	0	0	2	0
□ PAST TWELVE MONTHS	2	2	0	3	3
AMPHETAMINES, OTHER STIMULANTS					
● PAST THIRTY DAYS	1	1	1	0	0
□ PAST TWELVE MONTHS	1	1	1	1	2
TRANQUILIZERS					
● PAST THIRTY DAYS	0	0	0	0	0
□ PAST TWELVE MONTHS	1	1	0	1	0
BARBITURATES AND OTHER SEDATIVES					
● PAST THIRTY DAYS	0	0	0	0	0
PAST TWELVE MONTHS	1	1	0	1	1
HEROIN					
● PAST THIRTY DAYS	0	0	0	0	0
□ PAST TWELVE MONTHS	0	0	0	0	0
OTHER OPIATES					
● PAST THIRTY DAYS	0	0	0	0	0
□ PAST TWELVE MONTHS	0	0	0	0	0
OTHER DRUGS					
● PAST THIRTY DAYS	0	0	1	0	0
□ PAST TWELVE MONTHS	1	1	1	1	1
	(n=4768)	(n=2953)	(n=300)	(n=1174)	(n=341)

** AMONG CIVILIAN EMPLOYEES

SAMPLE STATEMENT--WITHIN THE PAST (TIME PERIOD), ___% OF THE CIVILIAN PERSONNEL LOCATED IN (GEOGRAPHIC LOCATION) HAVE USED (DRUG) AT LEAST ONCE. EXAMPLE--"WITHIN THE PAST THIRTY DAYS, 3% OF THE CIVILIAN PERSONNEL LOCATED IN CONUS HAVE USED MARIJUANA/HASHISH AT LEAST ONCE."

TABLE 5

DOD CIVILIAN POPULATION USING ALCOHOL DURING PAST THIRTY DAYS BY PAY GRADE (PERCENTAGE)

PAY GRADE	TOTAL DOD	SERVICE					
		ARMY	NAVY	MARINE CORPS	AIR FORCE	DLA	OTHER DOD
GENERAL SCHEDULE GM							
	67 (N= 569)	64 (N=151)	72 (N= 89)	60 (N=104)	66 (N=134)	64 (N= 66)	65 (N= 25)
	64 (N=1,407)	60 (N=310)	74 (N=242)	57 (N=188)	60 (N=315)	65 (N=209)	72 (N=143)
	76 (N= 934)	82 (N=195)	78 (N=183)	71 (N= 65)	65 (N=157)	74 (N=138)	83 (N=196)
SENIOR EXECUTIVE SERVICE	77 (N= 79)	79 (N= 20)	59 (N= 8)	50 (N= 2)	82 (N= 21)	68 (N= 12)	94 (N= 19)
WAGE GRADE							
	64 (N= 130)	64 (N= 25)	72 (N= 35)	46 (N= 26)	66 (N= 28)	38 (N= 14)	50 (N= 2)
	65 (N= 356)	66 (N= 72)	61 (N= 88)	36 (N= 77)	73 (N= 76)	68 (N= 37)	100 (N= 6)
	65 (N= 705)	59 (N=115)	70 (N=247)	72 (N=153)	61 (N=160)	90 (N= 18)	93 (N= 12)
	63 (N= 48)	41 (N= 4)	80 (N= 14)	43 (N= 18)	58 (N= 9)	-- (N= 1)	100 (N= 2)
SUPERVISOR	70 (N= 173)	86 (N= 33)	61 (N= 42)	58 (N= 42)	66 (N= 46)	58 (N= 8)	-- (N= 2)
TOTAL	4,401	925	948	675	946	503	407

SAMPLE STATEMENT--FOR THE (SERVICE), WITHIN THE PAST THIRTY DAYS, ___% OF THOSE CIVILIAN PERSONNEL IN PAY GRADE(S) ___ HAVE USED ALCOHOL AT LEAST ONCE. EXAMPLE--"FOR THE TOTAL DOD WITHIN THE PAST THIRTY DAYS, 67% OF THOSE CIVILIAN PERSONNEL IN PAY GRADES GS 1-4 HAVE USED ALCOHOL AT LEAST ONCE."

TABLE 6

DOD CIVILIAN POPULATION USING ALCOHOL DURING PAST TWELVE MONTHS BY PAY GRADE (PERCENTAGE)

PAY GRADE	TOTAL DOD	SERVICE					
		ARMY	NAVY	MARINE CORPS	AIR FORCE	DLA	OTHER DOD
GENERAL SCHEDULE GM							
1 4	81 (N= 569)	81 (N=151)	84 (N= 89)	84 (N=104)	80 (N=134)	74 (N= 66)	71 (N= 25)
5 10	80 (N= 1,407)	79 (N=310	83 (N=242)	72 (N=188)	78 (N=315)	80 (N=209)	85 (N=143)
11 12	88 (N= 934)	91 (N=195)	90 (N=183)	81 (N= 65)	80 (N=157)	87 (N=138)	91 (N=196)
13 15 SENIOR EXECUTIVE SERVICE	88 (N= 79)	86 (N= 20)	80 (N= 8)	100 (N= 2)	91 (N= 21)	92 (N= 12)	100 (N= 19)
WAGE GRADE							
1 4	76 (N= 130)	90 (N= 25)	74 (N= 35)	60 (N= 26)	74 (N= 28)	50 (N= 14)	100 (N= 2)
5 7	78 (N= 356)	79 (N= 72)	80 (N= 88)	53 (N= 77)	80 (N= 76)	78 (N= 37)	100 (N= 6)
8 11	77 (N= 705)	70 (N=115)	81 (N=247)	75 (N=153)	77 (N=160)	91 (N= 18)	100 (N= 12)
12 15	71 (N= 48)	41 (N= 4)	98 (N= 14)	43 (N= 18)	58 (N= 9)	100 (N= 1)	100 (N= 2)
WAGE SUPERVISOR	79 (N= 173)	98 (N= 33)	67 (N= 42)	59 (N= 42)	72 (N= 46)	100 (N= 8)	100 (N= 2)
TOTAL N	4,401	925	948	675	946	503	407

SAMPLE STATEMENT--FOR THE (SERVICE), WITHIN THE PAST TWELVE MONTHS, % OF THOSE CIVILIAN PERSONNEL IN PAY GRADE(S) HAVE USED ALCHOL AT LEAST ONCE. EXAMPLE--"FOR THE TOTAL DOD, WITHIN THE PAST TWELVE MONTHS, 81% OF THOSE CIVILIAN PERSONNEL IN PAY GRADES GS 1-4 HAVE USED ALCOHOL AT LEAST ONCE."

TABLE 7

DOD CIVILIAN ALCOHOL USE IN PAST THIRTY DAYS BY AGE BY SERVICE (PERCENTAGE)

AGE CATEGORY	TOTAL DOD	SERVICE					
		ARMY	NAVY	MARINE CORPS	AIR FORCE	DLA	OTHER DOD
25 AND UNDER	73 (N= 281)	69 (N= 67)	75 (N= 76)	66 (N= 32)	72 (N= 46)	84 (N= 34)	82 (N= 26)
26 34	77 (N=1,114)	75 (N=261)	84 (N=255)	76 (N=148)	70 (N=204)	72 (N=117)	83 (N=129)
35 49	69 (N=1,928)	66 (N=362)	80 (N=422)	58 (N=294)	64 (N=414)	72 (N=202)	79 (N=234)
50 AND OVER	62 (N=1,540)	62 (N=326)	63 (N=289)	42 (N=244)	60 (N=345)	61 (N=188)	76 (N=148)
TOTAL N	4,863	1,016	1,042	718	1,009	541	537

SAMPLE STATEMENT--FOR THE (SERVICE), WITHIN THE PAST THIRTY DAYS, ___% OF THE CIVILIAN PERSONNEL AGED ___ HAVE USED ALCOHOL AT LEAST ONCE. EXAMPLE--"FOR THE TOTAL DOD, WITHIN THE PAST THIRTY DAYS, 77% OF THE CIVILIAN PERSONNEL AGED 26-34 HAVE USED ALCOHOL AT LEAST ONCE."

TABLE 8

DOD CIVILIAN ALCOHOL USE IN PAST TWELVE MONTHS BY AGE BY SERVICE (PERCENTAGE)

AGE CATEGORY	TOTAL DOD	SERVICE					
		ARMY	NAVY	MARINE CORPS	AIR FORCE	DLA	OTHER DOD
25 AND UNDER	88 (N= 281)	91 (N= 67)	84 (N= 76)	98 (N= 32)	88 (N= 46)	92 (N= 34)	90 (N= 26)
26 - 34	89 (N=1,114)	89 (N=261)	92 (N=255)	87 (N=148)	87 (N=204)	83 (N=117)	92 (N=129)
35 - 49	83 (N=1,928)	83 (N=362)	85 (N=422)	68 (N=294)	80 (N=414)	84 (N=202)	88 (N=234)
50 AND OVER	73 (N=1,540)	72 (N=326)	76 (N=289)	53 (N=244)	71 (N=345)	77 (N=188)	86 (N=148)
TOTAL N	4,863	1,016	1,042	718	1,009	541	537

SAMPLE STATEMENT--FOR THE (SERVICE), WITHIN THE PAST TWELVE MONTHS, ___% OF THE CIVILIAN PERSONNEL AGED ___ HAVE USED ALCOHOL AT LEAST ONCE. EXAMPLE--"FOR THE TOTAL DOD, WITHIN THE PAST TWELVE MONTHS, 88% OF THE CIVILIAN PERSONNEL AGED 25 AND UNDER HAVE USED ALCOHOL AT LEAST ONCE."

TABLE 9

ALCOHOL CONSUMED ON AN AVERAGE DRINKING DAY
DURING PAST THIRTY DAYS FOR EACH DOD SERVICE GROUP (PERCENTAGE)

QUANTITY	TOTAL DOD	SERVICE					
		ARMY	NAVY	MARINE CORPS	AIR FORCE	DLA	OTHER DOD
TOTAL	62	63	71	53	61	64	77
1 DRINK	20	20	23	18	19	21	30
2 - 3 DRINKS	28	30	32	21	27	28	34
4 - 7 DRINKS *	11	11	12	11	12	12	11
8 - 11 DRINKS *	2	2	2	1	2	1	2
12 OR MORE DRINKS *	1	1	1	1	1	1	1
TOTAL N	4,935	1,032	1,054	734	1,024	550	541

* HEAVY DRINKERS AS DEFINED BY DOD

SAMPLE STATEMENT--FOR THE (SERVICE), WITHIN THE PAST THIRTY DAYS, ___% OF THOSE CIVILIAN PERSONNEL CONSUMED (QUANTITY) OF ALCOHOL ON AN AVERAGE DRINKING DAY. EXAMPLE--"FOR THE NAVY, WITHIN THE PAST THIRTY DAYS, 23% OF THOSE CIVILIAN PERSONNEL CONSUMED 1 DRINK OF ALCOHOL ON AN AVERAGE DRINKING DAY."

TABLE 10							
ALCOHOL DEPENDENCE DURING PAST TWELVE MONTHS BY DOD SERVICE GROUP BY AGE							
AGE CATEGORY	TOTAL DOD	SERVICE					
		ARMY	NAVY	MARINE CORPS	AIR FORCE	DLA	OTHER DOD
25 AND UNDER	0 (N=2,364)	0 (N= 67)	0 (N= 76)	0 (N= 32)	0 (N= 46)	3 (N= 35)	0 (N= 26)
26 34	1 (N=1,119)	1 (N=262)	1 (N=255)	2 (N=148)	2 (N=205)	1 (N=118)	0 (N=131)
35 49	1 (N=1,950)	1 (N=366)	0 (N=426)	4 (N=300)	1 (N=417)	1 (N=207)	1 (N=234)
50 AND OVER	1 (N=1,570)	1 (N=336)	1 (N=294)	1 (N=249)	1 (N=353)	1 (N=189)	0 (N=149)
TOTAL N	7,003	1,031	1,051	729	1,021	549	540

SAMPLE STATEMENT--FOR THE (SERVICE), WITHIN THE PAST TWELVE MONTHS, ___% OF THOSE CIVILIAN PERSONNEL BETWEEN THE AGES (AGE CATEGORY) ARE ALCOHOL DEPENDENT. EXAMPLE--"FOR THE ARMY, WITHIN THE PAST TWELVE MONTHS, 1% OF THOSE CIVILIAN PERSONNEL BETWEEN THE AGES 26-34 ARE ALCOHOL DEPENDENT."

TABLE 11

ALCOHOL: REASONS FOR NOT DRINKING
(PERCENTAGE *)

	REASONS	TOTAL	VERY IMPORTANT	SOME IMPORTANCE	NO IMPORTANCE
1.	Interferred With Work	100 (n=695)	68 (n=446)	13 (n= 93)	19 (n=156)
2.	Afraid of Health Consequences	100 (n=721)	67 (n=474)	19 (n=129)	14 (n=118)
3.	No Desire to Experience	100 (n=732)	64 (n=457	13 (n= 95)	24 (n=180)
4.	Against Religion	100 (n=733)	55 (n=352)	13 (n= 97)	32 (n=284)
5.	Spouse/Relative Disapproves	100 (n=693)	43 (n=265)	23 (n=152)	34 (n=276)
6.	Tried, Not Interested	100 (n=707)	35 (n=263)	18 (n=117)	47 (n=327)
7.	Too Costly	100 (n=680)	32 (n=219)	23 (n=144)	45 (n=317)
8.	Medically Restricted	100 (n=679)	27 (n=193)	6 (n= 47)	67 (n=439)
9.	Bad Experience	100 (n=673)	24 (n=162)	14 (n= 82)	63 (n=429)
10.	Friends Disapprove	100 (n=683)	22 (n=133)	24 (n=152)	54 (n=398)

* Percentages may not total 100% because of rounding. The number of cell observations (n) is an unweighted raw number. Reported percents are based on weighted observations; consequently the percents are not based on corresponding n's.

TABLE 12

ALCOHOL: REASONS FOR NOT DRINKING - MALE
(PERCENTAGE *)

	REASONS	TOTAL	VERY IMPORTANT	SOME IMPORTANCE	NO IMPORTANCE
1.	Interferred With Work	100 (n=434)	69 (n=288)	16 (n= 72)	14 (n= 74)
2.	Health Consequences	100 (n=445)	66 (n=292)	21 (n= 89)	13 (n= 64)
3.	No Desire to Experience	100 (n=442)	60 (n=254)	16 (n= 69)	25 (n=119)
4.	Against Religion	100 (n=457)	54 (n=220)	12 (n= 57)	34 (n=180)
5.	Spouse/Relative Disapproves	100 (n=430)	46 (n=180)	26 (n=100)	28 (n=150)
6.	Too Costly	100 (n=419)	34 (n=143)	27 (n=100)	39 (n=176)
7.	Tried, Not Interested	100 (n=434)	31 (n=146)	22 (n= 87)	48 (n=201)
8.	Bad Experience	100 (n=417)	26 (n=105)	16 (n= 62)	58 (n=250)
9.	Medically Restricted	100 (n=418)	23 (n=105)	8 (n= 32)	69 (n=281)
10.	Friends Disapprove	100 (n=420)	22 (n= 80)	26 (n= 99)	53 (n=241)

* Percentages may not total 100% because of rounding. The number of cell observations (n) is an unweighted raw number. Reported percents are based on weighted observations; consequently the percents are not based on corresponding n's.

TABLE 13

ALCOHOL: REASONS FOR NOT DRINKING - FEMALE
(PERCENTAGE *)

	REASONS	TOTAL	VERY IMPORTANT	SOME IMPORTANCE	NO IMPORTANCE
1.	No Desire To Experience Effects	100 (n=290)	70 (n=203)	7 (n= 26)	23 (n= 61)
2.	Health Consequences	100 (n=276)	68 (n=182)	15 (n= 40)	17 (n= 54)
3.	Interferred With Work	100 (n=261)	65 (n=158)	7 (n= 21)	28 (n= 82)
4.	Against Religion	100 (n=276)	58 (n=132)	14 (n= 40)	29 (n=104)
5.	Tried, Not Interested	100 (n=273)	42 (n=117)	12 (n= 30)	46 (n=126)
6.	Spouse/Relative Disapproves	100 (n=263)	38 (n= 85)	17 (n= 52)	45 (n=126)
7.	Medically Restricted	100 (n=261)	34 (n= 88)	2 (n= 15)	64 (n=158)
8.	Too Costly	100 (n=261)	28 (n= 76)	16 (n= 44)	56 (n=141)
9.	Friends Disapprove	100 (n=263	23 (n= 53)	22 (n= 53)	56 (n=157)
10.	Bad Experience	100 (n=256)	19 (n= 57)	9 (n= 20)	72 (n=179)

* Percentages may not total 100% because of rounding. The number of cell observations (n) is an unweighted raw number. Reported percents are based on weighted observations; consequently the percents are not based on corresponding n's.

TABLE 14

DRUGS: REASONS FOR NOT USING
(PERCENTAGE *)

REASONS	TOTAL	VERY IMPORTANT	SOME IMPORTANCE	NO IMPORTANCE
1. Health Consequences	100 (n=3,411)	84 (n=2,798)	8 (n=297)	8 (n= 316)
2. No Desire To Experience Effects	100 (n=3,557)	84 (n=2,926)	8 (n=276)	9 (n= 355)
3. Interferred With Work	100 (n=3,347)	76 (n=2,476)	13 (n=400)	12 (n= 471)
4. Illegal	100 (n=3,335)	65 (n=2,133)	19 (n=598)	17 (n= 604)
5. Spouse/Relative Disapproves	100 (n=3,327)	47 (n=1,499)	24 (n=774)	30 (n=1,054)
6. Against Religion	100 (n=3,367)	40 (n=1,287)	20 (n=614)	40 (n=1,466)
7. Friends Disapprove	100 (n=3,314)	31 (n=1,022)	28 (n=847)	41 (n=1,445)

* Percentages may not total 100% because of rounding. The number of cell observations (n) is an unweighted raw number. Reported percents are based on weighted observations; consequently the percents are not based on corresponding n's.

TABLE 15

DRUGS: REASONS FOR NOT USING - MALE
(PERCENTAGE *)

REASONS	TOTAL	VERY IMPORTANT	SOME IMPORTANCE	NO IMPORTANCE
1. Health Consequences	100 (n=2,196)	84 (n=1,786)	9 (n=211)	7 (n=199)
2. No Desire To Experience Effects	100 (n=2,279)	81 (n=1,813)	9 (n=218)	9 (n=248)
3. Interferred With Work	100 (n=2,161)	76 (n=1,595)	14 (n=281)	10 (n=285)
4. Illegal	100 (n=2,150)	63 (n=1,327)	20 (n=410)	17 (n=413)
5. Spouse/Relative Disapproves	100 (n=2,149)	49 (n=1,012)	24 (n=500)	27 (n=637)
6. Against Religion	100 (n=2,171)	40 (n= 801)	20 (n=395)	40 (n=975)
7. Friends Disapprove	100 (n=2,137)	32 (n= 678)	29 (n=573)	40 (n=886)

* Percentages may not total 100% because of rounding. The number of cell observations (n) is an unweighted raw number. Reported percents are based on weighted observations; consequently, the percents are not based on corresponding n's.

TABLE 16

DRUGS: REASONS FOR NOT USING - FEMALE
(PERCENTAGE *)

REASONS	TOTAL	VERY IMPORTANT	SOME IMPORTANCE	NO IMPORTANCE
1. No Desire To Experience Effects	100 (n=1,278)	89 (n=1,113)	3 (n= 58)	8 (n=107)
2. Health Consequences	100 (n=1,215)	84 (n=1,021)	6 (n= 86)	10 (n=117)
3. Interferred With Work	100 (n=1,186)	76 (n= 881)	10 (n=119)	14 (n=186)
4. Illegal	100 (n=1,185)	68 (n= 806)	17 (n=188)	16 (n=191)
5. Spouse/Relative Disapproves	100 (n=1,178)	43 (n= 487)	24 (n=274)	34 (n=417)
6. Against Religion	100 (n=1,196)	42 (n= 486)	20 (n=219)	39 (n=491)
7. Friends Disapprove	100 (n=1,177)	30 (n= 344)	225 (n=274)	45 (n=559)

* Percentages may not total 100% because of rounding. The number of cell observations (n) is an unweighted raw number. Reported percents are based on weighted observations; consequently, the percents are not based on corresponding n's.

If the sample size is increased, as occurs in the survey, then the S.E. is reduced. For example, if the measured rate, p, is still .50 and the sample is 520, then the S.E. is .022 and the ninety-five percent confidence interval is plus or minus .044.

In this survey, the sampling error and the S.E. is further reduced because the measured rates are often different from .50; both larger and smaller. Specifically, seven percent of those who work for the Navy report use of marijuana in the past twelve months. Since there were 1,150 respondents in the Navy associated with the measured rate of seven percent, the S.E. in this case is:

$$\text{S.E.} = [(.07)(.93)/1150]^{1/2}$$

$$= .008$$

and the ninety-five percent confidence interval for seven percent rate is:

$$\text{Upper limit} = .07 + (2)(.008)$$

$$= .086$$

$$\text{Lower limit} = .07 - (2)(.008)$$

$$= .054$$

Using the reported raw n and the p values in the tables, the reader can construct approximately ninety-five percent intervals using the methodology previously described. These intervals will be approximate because the sampling fractions are different for the various service/location combinations which would involve differential weighting for the errors. They are also approximate because the error used here is only that relevant for sampling and does not include other error components such as measurement error and the bias due to nonresponse.

Error of Estimation

The sample in this survey was designed to have a sampling error which will produce a sampling precision of at least five (5) percentage points with a ninety-five percent confidence. That is, the size of the sample was planned to be large enough to give a sampling error of 2.5 percentage points when the estimated phenomenon occurs at a rate of fifty percent. As was described earlier, these requirements specified that 385 individuals be randomly chosen within each of the ten service/location combination to generate the stated sampling precision in those subpopulations.

Also described earlier, was the adjustment of the sample size to accommodate an anticipated less than 100 percent response rate. Assuming a sixty percent response rate (and eight percent non-delivered questionnaires), the original sample size (385) was inflated to 700. As was seen, the actual response rates were considerably larger than the assumed sixty percent which means, of course, that the achieved sample size is larger than anticipated. This, in turn, indicates that the actual sampling precision is somewhat better than planned.

The sampling error (i.e. standard error of estimate) for the measures in this survey are given as:

$$S.E. = [p(1-p)/n]^{1/2}$$

where p is measured rate and n is the sample size. In the planned sample, n was 385 for a rate of .50 (fifty percent) which gave a standard error of .025 (2.5 percent). Multiplying this by two (i.e., two standard deviations will produce a ninety-five percent confidence interval of at most plus or minus .05 around the measured rate in the sample.

Number of Non-Deliverables

Reasons	Other DoD
1. Not delivered	222
2. Transferred or no longer employed	255
3. Retired	26
4. On leave	8
5. On active duty	1
6. Deceased	2
TOTAL	514

Within each service group, the total number of questionnaires not delivered is subtracted from the original sample sizes and the adjusted number is used to calculate the response rate. The original sample size, adjusted sample size and response rates for the service groups are given below.

Response Rates

	DoD Total
1. Original sample	6,594
2. Non-deliverables	514
3. Adjusted sample	6,080
4. Number of respondents	5,154
5. Response rates	87%

When the response data is combined for the entire survey, it is found that the overall response rate is 87 percent.

Representativeness

	DoD Population	Sample
Sex		
Male	65%	67%
Female	35%	33%
Race		
White	77%	80%
Black	14%	11%
Other	9%	9%
Age		
Under 26	10%	6%
26 - 34	24%	23%
35 - 49	37%	39%
Over 49	30%	32%

Response Rates

In a survey conducted by mail, response rates are calculated on the number of individuals who actually have an opportunity to respond. This number of individuals is usually somewhat less than the original number of questionnaires mailed because all of those selected do not receive questionnaires.

In the design of the sample for this survey, this eventuality was anticipated and the initial sample size was inflated under the assumption that eight (8) percent could not be delivered to those selected.

The non-delivery of questionnaires can occur for a variety of reasons. The reasons specific to this survey are given in the table below with the associated number of mailed questionnaires which fit that category. These numbers are given within the various service groups so that a response rate can be given for each group.

	Service Group Populations	Sample Sizes
1. Army		
CONUS	302,110	719
Non-CONUS	30,574	707
2. Navy		
CONUS	281,157	737
Non-CONUS	20,578	714
3. Marine Corps		
CONUS	16,346	699
Non-CONUS	678	315*
4. Air Force		
CONUS	205,571	657
Non-CONUS	10,216	690
5. DLA	46,492	709
6. Other DoD	27,687	647

*The Non-Continental U. S. sample for the Marine Corps was adjusted downward using a finite population correction because the population was small, i.e., 678.

Since the samples were drawn at different rates, the sampling fractions were different for the various subpopulations. Estimates performed across the subpopulations were balanced by applying different weights to the subsamples adjusted for the degrees of response.

A comparison of the population and sample characteristics is given below.

642 was divided by .92 to obtain a new adjustment of 698. The adjustment was rounded to 700 and this sample size was applied to each of the ten subpopulations for to total worldwide mailout sample of 7,000.

Sample Frame and Sample Selection

It was decided to generate a simple random sample of 700 within each subpopulation. This would produce the most precise sample in light of no prior information and would be in accordance with planned sampling error. To accomplish this, a sampling frame, or listing of individuals, was required from which the random sample could be selected. Such a sample frame was available in the data mainframed by the Defense Manpower Data Center (DMDC).

Using this frame, a simple random sample was drawn by computer in each of the ten subpopulations with the Social Security number employed as the selection code.

Since the sample was drawn using a computer, there was no guarantee that the sample size would be precisely the numbers planned. This is the result of the continuous process of updating personnel data tapes employed by the Defense Manpower Data Center where there can be a difference between the number of individuals on the tape at the time of planning and the time that the actual sample is drawn. The actual sample sizes are shown below:

which was originally planned. This reduction in sample size is primarily the result of reluctance on the part of the selected individuals to respond (non-response) and the non-delivery of questionnaires because individuals have moved, left their jobs, or cannot be located. To compensate for this potential loss of response, the initial sample size was increased.

In relation to non-response of the selected individuals in the sample, it was assumed that a response rate of sixty percent would be obtained in the survey. The pilot test of the survey procedures produced a response rate of eighty-two percent but this was carried out in the Washington, D. C. area under circumstances which must be considered more controlled than would be likely for the worldwide survey. An assumed response rate of sixty percent was considered conservative. By dividing the subpopulation required sample of 385 by .60, the adjustment for non-response produced a sample size of 642 for each subpopulation.

In relation to the non-delivery of questionnaires in the mailing process, some information was available on the extent of this threat. Individuals contacted at the Defense Manpower Data Center (DMDC), who had conducted mailout surveys to DoD civilians, estimated that three to five percent of their previous mailouts had been returned because of non-delivery. To be conservative, it was assumed that non-delivery could be as high as eight percent. This assumption was based on the use of mailing procedures not previously employed and the belief that there may be some lag in obtaining current personnel data tapes from the individual services and agencies. To carry out the sample size adjustment for non-delivery, the previously adjusted sample size of

.025 around the measured rates (percentages) obtained from the sample. This is the same as stating that one can be ninety-five percent confident that the population rate of a phenomenon is within five percentage points above or below the sample rate. Using this required precision, the size of the sample for each of the ten subpopulations was determined.

Since this survey was the first performed on civilian employees of DoD in relation to drug and alcohol use, there was no prior information available to be used with the precision requirements in calculating sample sizes for each of the ten subpopulations. The calculation of the required sample sizes was, therefore, based on the assumption that sample error in relation to the sample rates (p) (percents) was as large as it could be, i.e., the "worst case" situation. This occurs when the rate (p) measured in the sample is a fifty percent occurrence. The variance of a rate (percent) is given as $(p)(1-p)/n$, where p is the rate and n is the sample size. In the case of $p=.50$, $p(1-p)$ has the largest value and is used as a conservative upper bound in relation to the precision requirements (plus or minus .025) to calculate the size of the sample. These stated values produced required subsample sizes of 385. A sample of this size was assigned to each of the ten subpopulations.

Sample Size Adjustment and Method of Data Collection

The method of data collection specified by DoD for this survey was carried out by mailing questionnaires to the randomly selected individuals in the sample. Experience has shown that this method of data collection can frequently undermine the precision requirements of study by producing an obtained sample size somewhat smaller than that

Sample Coverage and Subpopulations

In planning adequate sample coverage, the population was first divided into ten subpopulations. These subpopulations were defined in an essentially natural manner in relation to function and geography. Since the four services employed the largest number of individuals in the most diverse geographical locations, eight subpopulations were constructed by dividing each service into continental and non-continental United States (CONUS and Non-CONUS) subpopulations. The Defense Logistics Agency has a very large workforce and was thus designated a subpopulation in itself. All other DoD agencies were combined in the last subpopulation. The ten subpopulations then are as follows:

1. Army: CONUS
2. Army: Non-CONUS
3. Navy: CONUS
4. Navy: Non-CONUS
5. Air Force: CONUS
6. Air Force: Non-CONUS
7. Marine Corps: CONUS
8. Marine Corps: Non-CONUS
9. Defense Logistics Agency
10. Other DoD Agencies

Sample Size and Precision

In measuring the rate of drug and alcohol use, and other behaviors, DoD stipulated that the precision in this survey would be controlled by allowing a sampling error of no more than plus or minus

APPENDIX B: RESEARCH DESIGN AND STATISTICAL METHODOLOGY

Introduction

The results of this report are based on responses to a questionnaire which was mailed to civilian employees at their work place during May through July 1982 with follow-up on non-respondents in September through November 1982. The sample was designed to reflect the composition of the civilian work force within the Department of Defense, military departments, agencies and operating components. This work force included eleven categories of employment including Senior Executive Service, General Schedule, General Merit, Wage Grade and Supervisory elements, hourly appropriate fund, non-appropriated fund employees and Scientific and Professional.

A survey technique was used because of its ablity to describe the phenomenon of alcohol and drug use among those people who would not normally come in contact with law enforcement, health or social agencies. Further, it was used because of consistent research findings over time that self-reported data tend to be truthful.

Sample Design

The population upon which measures of nonmedical drug and alcohol use were made in this study is the 889,633 full-time employees of the U. S. Department of Defense (as of September 30, 1981). This population is distributed over the four services and numerous agencies which are located in installations across the continental United States and throughout the world. The design of the sample, therefore, considered not only the precision of the measurements made but also methods of insuring that this diverse population received adequate coverage.

APPENDIX B: RESEARCH DESIGN AND STATISTICAL METHODOLOGY

TABLE 19

DRUGS: REASONS FOR STOPPING USE - FEMALE
(PERCENTAGE *)

REASONS	TOTAL	VERY IMPORTANT	SOME IMPORTANCE	NO IMPORTANCE
1. Tried, Not Interested	100 (n=222)	64 (n=146)	13 (n=28)	23 (n=48)
2. Bad Experience	100 (n=214)	41 (n= 84)	5 (n=23)	53 (n=107)
3. Too Costly	100 (n=215)	27 (n= 64)	22 (n=42)	51 (n=109)
4. Difficult To Get	100 (n=211)	19 (n= 41)	16 (n=30)	66 (n=140)

* Percentages may not total 100% because of rounding. The number of cell observations (n) is an unweighted raw number. Reported percents are based on weighted observations; consequently, the percents are not based on corresponding n's.

TABLE 18

DRUGS: REASONS FOR STOPPING USE - MALE
(PERCENTAGE *)

REASONS	TOTAL	VERY IMPORTANT	SOME IMPORTANCE	NO IMPORTANCE
1. Tried, Not Interested	100 (n=466)	55 (n=244)	16 (n=59)	30 (n=163)
2. Bad Experience	100 (n=443)	30 (n=130)	18 (n=63)	52 (n=250)
3. Too Costly	100 (n=446)	23 (n=104)	21 (n=79)	56 (n=263)
4. Difficult To Get	100 (n=441)	12 (n= 40)	11 (n=52)	78 (n=349)

* Percentages may not total 100% because of rounding. The number of cell observations (n) is an unweighted raw number. Reported percents are based on weighted observations; consequently, the percents are not based on corresponding n's.

TABLE 17

DRUGS: REASONS FOR STOPPING USE
(PERCENTAGE *)

REASONS	TOTAL	VERY IMPORTANT	SOME IMPORTANCE	NO IMPORTANCE
1. Tried, Not Interested	100 (n=688)	57 (n=390)	15 (n=87)	28 (n=211)
2. Bad Experience	100 (n=657)	34 (n=214)	14 (n=86)	53 (n=357)
3. Too Costly	100 (n=661)	24 (n=168)	21 (n=121)	55 (n=372)
4. Difficult To Get	100 (n=652)	14 (n= 81)	12 (n=82)	74 (n=489)

* Percentages may not total 100% because of rounding. The number of cell observations (n) is an unweighted raw number. Reported percents are based on weighted observations; consequently, the percents are not based on corresponding n's.

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