Number 246 • April 8, 1994

Advance Data

From Vital and Health Statistics of the CENTERS FOR DISEASE CONTROL AND PREVENTION/National Center for Health Statistics

Restricted Activity Days and Other Problems Associated With Use of Marijuana or Cocaine Among Persons 18–44 Years of Age: United States, 1991

by David W. Keer, M.A., Division of Health Interview Statistics, National Center for Health Statistics; James D. Colliver, Ph.D., Andrea N. Kopstein, M.P.H., Arthur L. Hughes, M.S., Division of Epidemiology and Prevention Research, National Institute on Drug Abuse; Joseph C. Gfroerer, Office of Applied Studies, Substance Abuse and Mental Health Services Administration; Stewart C. Rice, Jr., and Charlotte A. Schoenborn, M.P.H., Division of Health Interview Statistics, National Center for Health Statistics

Introduction

In 1991, the Division of Health Interview Statistics (DHIS), the National Center for Health Statistics (NCHS), fielded a Drug and Alcohol Use Survey (DAU) as part of the National Health Interview Survey (NHIS). The DHIS collaborated with the National Institute on Drug Abuse on the development of the survey. The Questionnaire Design Research Laboratory at NCHS assisted in the development of the questionnaire and review of data collection methods. The DAU questionnaire was self-administered and was a part of the NHIS data collection conducted by the U. S. Bureau of the Census. In conjunction with other parts of the NHIS questionnaire, the NHIS-DAU allows one to assess associations between use of marijuana and cocaine, problems related to use of the drugs, and various health status indicators.

The NHIS is a household survey of the civilian noninstitutionalized population of the United States. As with all special topic questionnaires that are part of the NHIS, the DAU can be linked to general health data and other information obtained in the NHIS to allow extensive analyses. The NHIS data collection consists of two parts: a basic health and demographic questionnaire that remains the same each year and is completed for each household member and special topic questionnaires. The content of the special topic questionnaires varies from year to year, and these questionnaires are usually administered to a randomly sampled adult in each family. In 1991, in addition to the DAU, the special topics included hearing; Health Promotion and Disease Prevention (HPDP); AIDS-related knowledge, attitudes, and behaviors; and family income.

The DAU questionnaire was restricted to persons 18–44 years of age. Although the questions covered use of a range of illicit drugs and licit drugs subject to abuse, the greatest number of items pertained to marijuana and cocaine. For marijuana and cocaine, the questions covered the recency and frequency of use and included items related to problems and drug-related behaviors associated with abuse and dependence. These latter items were developed to reflect discrete diagnostic criteria for cocaine and marijuana dependence and abuse as described in the *Diagnostic and Statistical Manual of Mental Disorders*, Third edition, Revised (DSM-III-R) (1). Separate sets of items on the questionnaire focused on marijuana- and cocaine-related problem and use behavior during the respondent's lifetime and during the year prior to the survey.

The primary goals of this Advance Data are to:

- briefly discuss the relationship between restricted activity days and use of cocaine and marijuana,
- present data on problems and drug-related behaviors associated with cocaine and marijuana dependence and abuse, and
- provide documentation of the methodology of the NHIS-DAU.

Restricted activity days, which are sometimes used as indicators of health

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control and Prevention
National Center for Health Statistics

CENTERS FOR DISEASE CONTROL AND PREVENTION

status, may also reflect a pattern of drug use. As noted earlier, the items that assess dependency and abuse were developed based upon clinical criteria provided in the DSM-III-R.

All tables presented in this report use standard NHIS age groupings to differentiate persons 18–44 years of age; however, the age categories are wide enough to allow some age effects within them, so that some of the differences between drug use categories may be confounded by age differences. Data are also shown separately for males and females. At the present time, these demographic groupings have proven the most statistically reliable for reporting results from the drug use questionnaire. Recency of use of marijuana and cocaine, whether "past year" or "lifetime" use, forms the basis of most tables in this report. The past year frame corresponds to the time reference period for many measures in the NHIS. For reasons discussed in the Technical notes, this Advance Data does not report overall prevalence of drug use.

Restricted activity days and marijuana and cocaine use

Initially, three measures of health status were considered for inclusion in the current report: perceived or self-perceived health status, limitation of major life activities, and restricted activity (RA) days. Early analyses (not shown here) indicate that, when controlling for age and sex, there are few, if any, statistically significant associations between use of marijuana or cocaine and self-perceived health status or limitations of activity, as measured in the NHIS basic health and demographic interview. The apparent lack of statistical significance seems intuitive given that the age group for the DAU, 18–44 years of age, has a low incidence of fair or poor health and limitations of activity.

In the analysis of associations between use of marijuana or cocaine and selected health status measures, respondents were grouped according to six categories of drug use:

1. Persons who had never used either drug.
2. Persons who had used marijuana during the past year but who had never used cocaine.
3. Persons who had used marijuana during the past year and had used cocaine at some point prior to the past year (lifetime use).
4. Persons who had used both marijuana and cocaine during the past year.
5. Persons who had used marijuana at some point prior to the past year (lifetime use), but had not used marijuana during the past year and had never used cocaine.
6. Persons who had used both marijuana and cocaine at some point prior to the past year (lifetime use), but had not used either drug during the past year.

The groupings were designed to include all possible combinations of marijuana and cocaine use. Numbers for persons who had used cocaine but had never used marijuana are not shown in this report because so few persons were in this group.

The question used to determine recency of use of marijuana or cocaine asked:

When was the most recent time that you used (*marijuana/cocaine*)?

A. Within the past week (7 days).
B. More than 1 week but less than 1 month (30 days) ago.
C. One or more months ago but less than 1 year ago.
D. One or more years ago.
E. I HAVE NEVER used (*marijuana/cocaine*), not even once.

Three types of RA days are included in the measure reported in table 1: work-loss days for currently employed persons, bed days, and cut-down days. A work-loss day is one on which a currently employed person 18–44 years of age missed more than half a day from a job or business because of illness or injury. A bed day is one during which a person stayed in bed more than half a day because of illness or injury. A cut-down day is a day on which a person cut down for more than half a day on the things he or she usually does.

The measures of RA days were obtained from a series of questions asked of the household respondent during the NHIS basic interview. In the NHIS, RA days are measured for the 2-week period that immediately preceded the interview week. The questions and data edits are designed to account for overlap among the types of RA days and to specify that the RA days of interest are those that occur "because of illness or injury"; the RA days are included whether caused by acute or chronic illness. It is important to note that it is assumed that the respondent can identify and report only those RA days that arose because of illness or injury.

Table 1 shows the percent of persons 18–44 years of age with one or more RA days during the 2 weeks prior to the household interview, by marijuana and cocaine use, age, and sex. Figure 1 illustrates differences in the percent of persons with RA days by marijuana and cocaine use. Generally, discussion of RA days is more difficult than discussion of yearly estimates because the NHIS measures RA days that occurred in the 2-week period preceding the interview week. In the current case, however, the comparison is of the differences between users or nonusers of marijuana or cocaine. If the 2-week estimate were converted to an annual figure, any conversion factors would affect all classes equally and would not change the underlying relationships between different groups of drug users.

RA days are less likely to be reported for a person who had never used cocaine or marijuana or had used marijuana at some point but had never used cocaine. Put another way, among persons 18–44 years of age, use of cocaine—whether during the year prior to the interview or in the more distant past—is associated with a greater likelihood of having RA days. The differences are statistically significant, occur across most groupings by drug use and age, and are seen for both men and women. Not shown are data indicating that the patterns are the same whether respondents are white or black. Because of sample size, the number of respondents who were black and reported any past year use of marijuana

Table 1. Percent (and standard error) of persons 18–44 years of age with one or more restricted activity days during the 2 weeks prior to the household interview, by marijuana and cocaine use, age, and sex: United States, 1991

Age and sex	Marijuana and cocaine use[1]					
		Used within past year			Lifetime use but not past year	
	Never used marijuana or cocaine	Marijuana only, never used cocaine	Marijuana only, prior cocaine use	Marijuana and cocaine	Marijuana only	Marijuana and cocaine
Age						
18–44 years	8.7 (0.3)	10.5 (1.1)	14.7 (1.3)	16.2 (2.6)	10.2 (0.5)	13.6 (1.1)
18–24 years	8.2 (0.6)	10.0 (1.7)	14.3 (3.1)	17.0 (4.6)	10.3 (1.4)	18.2 (4.1)
25–34 years	7.9 (0.5)	10.1 (1.8)	13.2 (1.8)	15.9 (2.9)	9.4 (0.6)	12.6 (1.3)
35–44 years	9.7 (0.5)	12.8 (2.8)	18.2 (3.3)	*15.5 (6.8)	11.0 (0.8)	14.0 (1.7)
Sex						
Male, 18–44 years	6.9 (0.4)	9.5 (1.3)	13.2 (1.7)	15.8 (3.0)	8.2 (0.7)	11.7 (1.4)
18–24 years	6.3 (0.8)	7.3 (1.7)	*11.1 (3.5)	*17.0 (5.9)	8.8 (1.9)	19.8 (5.8)
25–34 years	6.3 (0.7)	9.9 (2.3)	11.8 (2.1)	15.1 (3.6)	6.8 (0.8)	9.7 (1.6)
35–44 years	7.9 (0.8)	13.8 (3.6)	17.3 (4.2)	*16.1 (9.1)	9.3 (1.2)	12.7 (2.2)
Female, 18–44 years	10.1 (0.4)	11.9 (1.9)	17.7 (2.7)	17.2 (3.7)	12.3 (0.6)	16.2 (1.6)
18–24 years	9.9 (1.0)	13.2 (2.8)	*19.8 (6.2)	*17.2 (7.1)	11.7 (1.8)	*16.8 (5.1)
25–34 years	9.2 (0.6)	10.4 (2.4)	16.0 (3.4)	18.7 (5.2)	11.8 (0.8)	16.0 (2.0)
35–44 years	11.0 (0.7)	*10.7 (4.3)	*20.3 (6.9)	*13.8 (6.1)	13.2 (1.2)	16.3 (2.3)

NOTE: All standard errors are shown in parentheses.
[1]Very few respondents who reported using cocaine said that they had never used marijuana. For that reason, no figures are shown for "cocaine only" use.

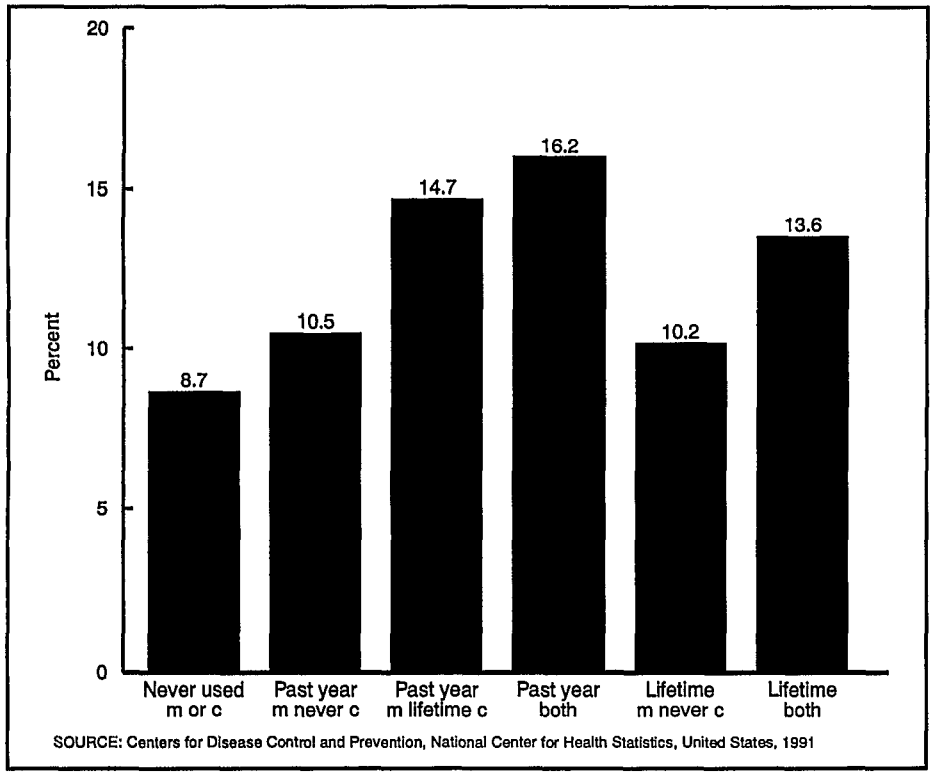

Figure 1. Percent of persons 18–44 years of age with one or more restricted activity days in past 2 weeks, by use of marijuana (m) and cocaine (c): United States, 1991

or cocaine was too small to allow reliable analysis; for that reason, the data are not shown in table 1.

Depending upon the recency of cocaine use, 13.6 to 16.2 percent of all persons ages 18–44 who had used cocaine had one or more RA days during the 2 weeks prior to the household interview. Of people who had never used cocaine, the estimates of those with one or more RA days ranged from 8.7 to 10.5 percent, depending upon whether or not the person had used marijuana at some point.

As table 1 indicates, the positive association between RA days and use of cocaine is consistent for both men and women 18–44 years of age. Among men 18–44 who had used cocaine, the range having RA days during the 2-week period was 11.7 to 15.8 percent, while among women who had used cocaine, the range was 16.2 to 17.7 percent. For men who had never used cocaine, 6.9 to 9.5 percent had RA days and for women who had never used cocaine, RA days were reported for 10.1 to 12.3 percent.

It is found, then, that 18–44 year olds who use, or used, cocaine, have significantly more RA days related to illness and injury. However, it is noteworthy that the DAU was administered *only* to persons ages 18–44, a group less likely than older persons to be in fair or poor health or to have activity limitations. As the current report suggests, the relationship between RA days and drug use warrants further study and might be analyzed in the context of other health-related activities and specific health conditions.

Behaviors associated with marijuana use

Persons who had used marijuana during the 12 months prior to the survey were asked 19 questions regarding problems or marijuana-related behaviors

they might have experienced in the same time period as a result of using the drug. The items were selected to reflect components of abuse and dependence based on DSM-III-R diagnostic criteria. This section includes data only for persons reporting past year marijuana use. The data for individual items discussed here excludes 10.4 to 11.0 percent of persons because of item nonresponse; see the Technical notes for further information.

Table 2 shows the prevalence of reported problems and marijuana-related behaviors among past year users. The data are displayed by sex and three age groupings (18–24, 25–34, and 35–44). The problem questions include no information on frequency of occurrences. Therefore, a positive response could mean as few as one occurrence during the year prior to the interview.

Overall, 20.0 percent of past year marijuana users reported using marijuana more often than planned. There was not much difference by sex, but 18–24-year-old users were more likely than users in the two older age groups to respond positively to this question.

A large percent (26.7) of past year marijuana users responded positively to the item on being high on at least one occasion while at home caring for their family. A greater proportion of men (29.3 percent) responded positively to this item as compared with women (22.0 percent). Past year users 25 and older were more likely than the youngest age group to report this problem behavior; 34.3 percent of those

Table 2. Percent (and standard error) of past year marijuana users 18–44 years of age reporting behaviors associated with marijuana use, by sex and age: United States, 1991

Problems associated with marijuana use experienced in the past year	*Total*	*Sex*		*Age*		
		Male	*Female*	*18–24 years*	*25–34 years*	*35–44 years*
During the past 12 months, have you—	Percent (SE) of past year marijuana users responding yes[1]					
Ended up using marijuana more often than you thought you would?	20.0 (1.1)	20.6 (1.4)	19.0 (1.8)	25.7 (2.1)	19.1 (1.6)	12.3 (1.8)
Tried to cut down or stop using marijuana but found that you couldn't?	6.7 (0.7)	7.4 (0.9)	5.5 (1.0)	5.9 (0.9)	8.4 (1.2)	4.5 (1.2)
Used marijuana every day for 2 weeks or more?	21.0 (1.1)	24.0 (1.5)	15.5 (1.7)	19.5 (1.7)	22.9 (1.8)	19.4 (2.2)
Been high on marijuana while you were at work or at school?	21.6 (1.1)	25.8 (1.5)	13.9 (1.5)	25.1 (2.1)	21.2 (1.6)	16.6 (2.1)
Been high on marijuana while you were at home taking care of your home or family?	26.7 (1.2)	29.3 (1.5)	22.0 (1.7)	19.0 (1.8)	29.4 (1.8)	34.3 (2.7)
Skipped going to work or school because you were high on marijuana?	3.8 (0.5)	5.1 (0.7)	1.5 (0.4)	6.2 (1.1)	3.4 (0.7)	*0.7 (0.4)
Had problems with work, school, or with the police because of using marijuana?	4.0 (0.6)	5.3 (0.9)	*1.5 (0.5)	5.8 (1.3)	3.6 (0.8)	*1.5 (0.7)
Continued to use marijuana even when you knew it was causing you problems with work, school, or with the police?	3.7 (0.5)	4.7 (0.8)	2.0 (0.5)	4.8 (1.1)	3.8 (0.7)	*1.8 (0.8)
Failed to take care of your home or family because you were high on marijuana?	2.6 (0.5)	3.1 (0.6)	*1.7 (0.8)	*3.4 (1.1)	2.6 (0.7)	*1.3 (0.6)
Had problems with your family or friends because of using marijuana?	4.9 (0.7)	6.1 (0.9)	2.6 (0.7)	6.7 (1.3)	4.6 (0.9)	*2.4 (0.9)
Continued to use marijuana even when you knew it was causing you problems with your family or friends?	4.8 (0.6)	6.1 (0.9)	2.4 (0.6)	5.7 (1.1)	5.0 (0.9)	*3.0 (0.9)
Driven a car or other vehicle within 3 hours after using marijuana?	45.9 (1.3)	51.0 (1.7)	36.4 (2.0)	41.9 (2.3)	48.5 (1.9)	47.0 (3.1)
Spent less time on activities that used to be important to you—like playing sports, hobbies, or other interests—so that you could use marijuana?	7.8 (0.8)	8.9 (1.1)	5.7 (0.9)	9.2 (1.4)	7.9 (1.2)	4.9 (1.2)
Felt depressed, anxious, or uninterested in things because of using marijuana?	10.4 (0.9)	11.4 (1.2)	8.5 (1.1)	11.5 (1.4)	11.3 (1.3)	6.6 (1.3)
Continued to use marijuana even though you knew it made you feel depressed, anxious, or uninterested in things?	8.9 (0.8)	10.0 (1.1)	7.0 (1.0)	8.8 (1.3)	10.6 (1.3)	5.5 (1.2)
Built up a tolerance to marijuana so that the same amount of marijuana had less effect than before?	16.2 (1.1)	18.3 (1.5)	12.4 (1.5)	18.8 (1.9)	17.1 (1.6)	9.9 (1.8)
Felt sick or irritable because you stopped or cut down on your marijuana use?	5.8 (0.7)	6.4 (1.0)	4.7 (0.9)	6.2 (1.2)	6.6 (1.1)	3.6 (1.0)
Used alcohol or drugs because you felt sick or irritable when you stopped or cut down on your marijuana use?	5.0 (0.7)	6.0 (1.0)	3.1 (0.8)	5.7 (1.2)	5.2 (1.0)	*3.3 (1.1)
Gone to self-help group, counselor, doctor, or other professional to get help because of your marijuana use?	2.4 (0.4)	2.5 (0.5)	2.1 (0.5)	*2.1 (0.7)	2.7 (0.6)	*2.0 (0.8)

NOTE: All standard errors are shown in parentheses.
[1]Percentages calculated excluding unknowns; see Technical notes.

users 35–44 years of age and 29.4 percent of those 25–34 years of age responded positively compared with 19.0 percent of those 18–24 years of age.

Overall, 16.2 percent of past year marijuana users reported that they had built up a tolerance to the drug so that the same amount of marijuana had less effect than before. This problem was more likely among male past year users (18.3 percent for males versus 12.4 percent of the female users). This problem was also more likely to occur among users who were 18–34 years of age as compared with the oldest users.

One statistic from the survey was the percent of past year marijuana users that reported driving at least once in the past year within 3 hours of smoking marijuana. Overall, 45.9 percent of the past year users reported driving under the influence of this drug. Males were much more likely than females to report this problem behavior (51.0 percent of male users compared with 36.4 percent of female users).

Approximately one-fifth of past year marijuana users reported being high on marijuana while at school or while at work. Males were about twice as likely as their female counterparts (25.8 compared with 13.9 percent) to report this problem behavior. Users between the ages of 18–24 were more likely than users in the oldest age group to report being high on marijuana at school or work.

A large proportion of past year users reported frequent use of the drug. Overall, 21.0 percent of past year users reported using marijuana every day for 2 weeks or more in the past year. Although frequent use did not differ much by age, a greater proportion of males (24.0 percent) as compared with females (15.5 percent) reported this behavior.

Figure 2 illustrates reporting of selected behaviors by all past year users. Figure 3 shows the percent of past year marijuana users reporting selected problems by sex. Figure 4 shows the percent of past year marijuana users reporting selected problems by age.

Behaviors associated with cocaine use

Persons who had used cocaine during the 12 months prior to the survey

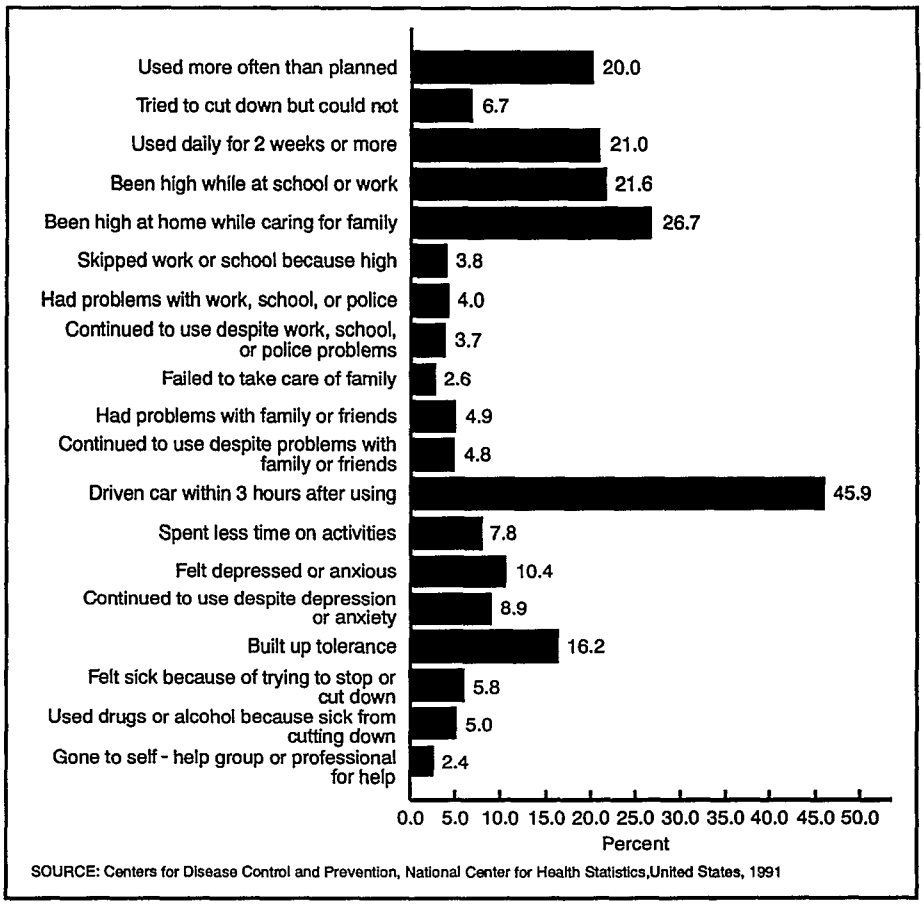

Figure 2. Percent of past year marijuana users reporting selected behaviors in the past year: United States, 1991

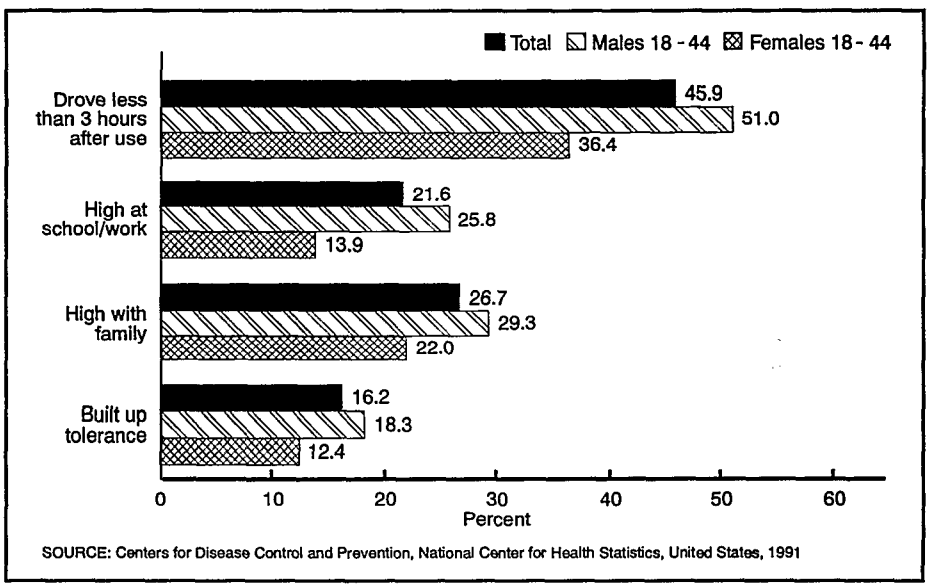

Figure 3. Percent of past year marijuana users reporting selected problems in past year, by sex: United States, 1991

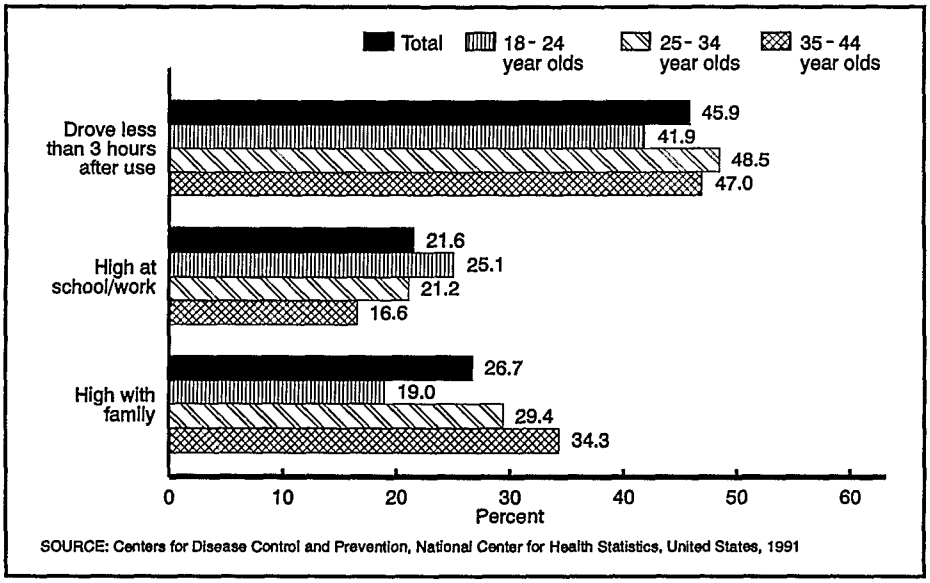

Figure 4. Percent of past year marijuana users reporting selected problems in past year, by age: United States, 1991

were asked 21 questions regarding problems or cocaine-related behaviors they might have experienced in the same time period as a result of using the drug. The items were selected to reflect components of abuse and dependence based on DSM-III-R diagnostic criteria. Figure 5 and table 3 show the estimated percentage reporting cocaine-related problems or behaviors in the overall user population and according to sex and age. The data for individual items discussed here excludes 13.3 to 14.5 percent of persons because of item nonresponse; see the Technical notes for further information.

One-quarter (26.7 percent) of past year cocaine users said that, in the past year, they had used the drug more often than they had planned. Around one-half as many (13.4 percent) had tried to cut down or stop using cocaine but found they could not.

Driving a car, at least once in the past year, within an hour after using cocaine was reported by 43.5 percent of past year users. Male users were more likely than female users (49.2 percent versus 29.1 percent, respectively) to have driven after using cocaine.

More than one-sixth (17.9 percent) of cocaine users said they had been high on the drug at school or work. Males were more likely than females (20.8 versus 10.5 percent, respectively) to have been high in these settings. Skipping school or work because of being high on cocaine or experiencing its aftereffects was acknowledged by 10.7 percent of users, and 9.1 percent said they had experienced problems with school, work, or the police because of using cocaine.

Over one-sixth (17.2 percent) of the past year cocaine users said they had been high on the drug while at home caring for their family, and 10.0 percent had at least one occasion on which they failed to take care of their home or family because they were high on cocaine or feeling its aftereffects. Problems with family or friends because of cocaine use were reported by 16.4 percent of users, and 14.8 percent had continued to take the drug despite these problems with family or friends.

One-fifth (20.4 percent) of cocaine users said the drug had made them feel depressed, anxious, uninterested in things, or suspicious or distrustful of people. This percent was higher for persons 25–34 years of age than for those 18–24 years of age (23.2 versus 13.9 percent, respectively). Continued use of cocaine despite these emotional effects was reported by 16.1 percent. One-eighth (13.2 percent) said their use of cocaine had caused them to spend less time on activities that used to be

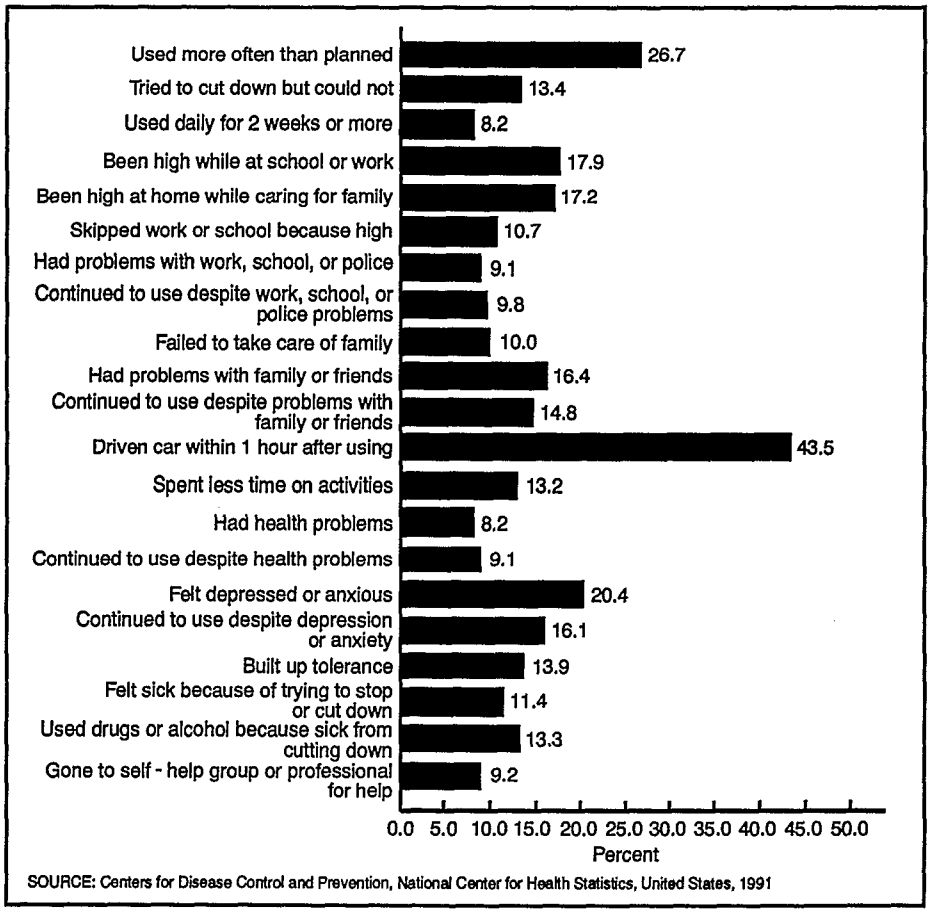

Figure 5. Percent of past year cocaine users reporting selected behaviors in the past year: United States, 1991

Table 3. Percent (and standard error) of past year cocaine users 18–44 years of age reporting behaviors associated with cocaine use, by sex and age: United States, 1991

Problems associated with cocaine use experienced in the past year	Total	Sex		Age		
		Male	Female	18–24 years	25–34 years	35–44 years
During the past 12 months, have you—	Percent (SE) of past year cocaine users responding yes[1]					
Ended up using cocaine more often than you thought you would?	26.7 (2.7)	27.9 (3.3)	23.7 (3.6)	25.8 (5.0)	27.8 (3.6)	25.4 (4.8)
Tried to cut down or stop using cocaine but found that you couldn't?	13.4 (2.0)	14.7 (2.5)	10.2 (2.5)	*9.0 (2.8)	13.5 (3.0)	19.0 (4.3)
Used cocaine every day for 2 weeks or more?	8.2 (1.5)	9.4 (1.8)	*5.0 (1.8)	*8.4 (2.6)	*6.0 (2.1)	*12.9 (4.2)
Been high on cocaine or feeling its after effects while you were at work or at school?	17.9 (2.1)	20.8 (2.7)	10.5 (2.6)	11.5 (3.1)	19.3 (2.9)	22.9 (5.8)
Been high on cocaine or feeling its aftereffects while you were at home taking care of your home or family?	17.2 (2.2)	18.8 (2.7)	13.2 (3.3)	10.1 (2.9)	19.1 (3.3)	21.9 (5.1)
Skipped going to work or school because you were high on cocaine or feeling its aftereffects?	10.7 (1.6)	11.9 (2.0)	*7.7 (2.4)	10.7 (2.9)	10.2 (2.4)	*11.9 (4.2)
Had problems with work, school, or with the police because of using cocaine?	9.1 (1.5)	11.4 (2.1)	*3.4 (1.5)	*6.0 (2.3)	10.9 (2.6)	*9.0 (4.1)
Continued to use cocaine even when you knew it was causing you problems with work, school, or with the police?	9.8 (1.7)	11.1 (2.1)	*6.6 (2.2)	*7.8 (2.5)	10.4 (3.0)	*11.1 (4.0)
Failed to take care of your home or family because you were high on cocaine or feeling its aftereffects?	10.0 (1.8)	10.8 (2.2)	7.9 (2.3)	*7.5 (2.5)	10.5 (2.8)	*12.1 (4.2)
Had problems with your family or friends because of using cocaine?	16.4 (2.0)	17.5 (2.4)	13.5 (3.0)	12.7 (3.2)	18.4 (3.1)	16.5 (4.8)
Continued to use cocaine even when you knew it was causing you problems with your family or friends?	14.8 (1.9)	16.2 (2.4)	11.1 (2.6)	*8.4 (2.6)	18.7 (3.1)	*13.9 (4.5)
Driven a car or other vehicle within 1 hour after using cocaine?	43.5 (2.8)	49.2 (3.4)	29.1 (4.2)	39.7 (6.1)	46.7 (4.0)	40.9 (6.0)
Spent less time on activities that used to be important to you—like playing sports, hobbies, or other interests—so that you could use cocaine?	13.2 (2.0)	14.3 (2.5)	10.3 (2.5)	*10.0 (3.0)	13.6 (2.9)	16.4 (4.2)
Had health problems caused by using cocaine?	8.2 (1.6)	9.0 (2.0)	*6.0 (2.0)	*3.2 (1.7)	8.8 (2.5)	*13.2 (4.1)
Continued to use cocaine even when you knew it was causing you health problems?	9.1 (1.6)	10.2 (2.1)	*6.4 (2.1)	*3.5 (1.7)	10.7 (2.5)	*12.6 (4.1)
Felt depressed, anxious, uninterested in things, or suspicious or distrustful of people because of using cocaine?	20.4 (2.3)	22.2 (2.9)	16.0 (3.1)	13.9 (3.4)	23.2 (3.2)	22.5 (6.6)
Continued to use cocaine even though you knew it made you feel depressed, anxious, or uninterested in things, or suspicious or distrustful of people?	16.1 (2.1)	18.0 (2.7)	11.4 (2.7)	11.8 (3.1)	17.8 (3.1)	17.9 (5.2)
Built up a tolerance to cocaine so that the same amount of cocaine had less effect than before?	13.9 (2.0)	15.6 (2.5)	9.6 (2.5)	12.5 (3.5)	13.3 (2.5)	17.1 (4.7)
Felt sick or irritable because you stopped or cut down on your cocaine use?	11.4 (1.8)	13.0 (2.3)	7.3 (2.2)	9.2 (2.8)	11.9 (2.9)	*13.2 (4.3)
Used alcohol or drugs because you felt sick or irritable when you stopped or cut down on your cocaine use?	13.3 (1.9)	13.5 (2.3)	12.9 (2.8)	10.6 (3.1)	16.5 (3.0)	*9.4 (3.2)
Gone to self-help group, counselor, doctor, or other professional to get help because of your cocaine use?	9.2 (1.5)	10.5 (1.9)	*6.1 (2.0)	*5.3 (2.1)	11.3 (2.6)	*9.6 (3.8)

NOTE: All standard errors are shown in parentheses.
[1]Percentages calculated excluding unknowns; see Technical notes.

important to them, such as playing sports, hobbies, or other interests.

During the year prior to the interview, 8.2 percent of the cocaine users had experienced health problems that they attributed to the drug.

One cocaine user in 12 (8.2 percent) had used the drug daily for 2 weeks or longer in the past year. One-seventh (13.9 percent) said that they had "built up a tolerance for cocaine so that the same amount of cocaine had less effect than before." One in nine (11.4 percent) acknowledged having felt sick or irritable because of stopping or reducing cocaine use, and 13.3 percent had used alcohol or drugs to relieve this sickness or irritability. Nine percent had gone to a self-help group, counselor, doctor, or other professional to get help because of their cocaine use.

References

1. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 3d ed, revised. Washington: American Psychiatric Association. 1987.
2. Massey JT, Moore TF, Parsons VL, Tadros W. Design and estimation for the National Health Interview Survey, 1985–94. National Center for Health Statistics. Vital Health Stat 2(110). 1989.

3. Shah BV, Barnwell BG, Hunt PN, LaVange LM. SUDAAN User's Manual, Release 5.50. Research Triangle Park, North Carolina: Research Triangle Institute. 1991.
4. Shah BV. SESUDAAN: Standard Errors Program for Computing of Standardized Rates from Sample Survey Data. Research Triangle Park, North Carolina: Research Triangle Institute. 1981.
5. Adams PF, Benson V. Current estimates from the National Health Interview Survey, 1991. National Center for Health Statistics. Vital and Health Stat 10(184). 1992.

Technical notes

General information

The estimates presented in this report are based on the National Health Interview Survey (NHIS), an ongoing survey of households in the United States, conducted by the National Center for Health Statistics. Each week, a probability sample of the civilian noninstitutionalized population of the United States is surveyed for the NHIS by interviewers employed by the U.S. Bureau of the Census. Interviewers obtain information about the health and other characteristics of each member of the households in the NHIS sample.

The NHIS has been conducted continuously since 1957. The sample design of the survey has undergone changes following each census. This periodic redesign of the NHIS sample allows the incorporation of the latest population information from the most recent Decennial Census and permits the alignment of the sample design with changes in survey objectives. The data presented in this report were collected based on the NHIS sample design implemented in 1985. A detailed description of the sample design is contained in the publication entitled *Design and Estimation for the National Health Interview Survey, 1985–94* (2).

The 1991 NHIS sample encompassed completed interviews for the basic health questionnaire of 46,761 households and 120,032 persons. The NHIS Drug and Alcohol Use (DAU) questionnaire was completed by 21,174 persons 18–44 years of age. The sample for the DAU was a subset of the sample selected for the 1991 NHIS special topic questionnaire on Health Promotion and Disease Prevention (HPDP). Within each NHIS sample household, one adult 18 years of age or over was randomly selected to be interviewed for several special topic questionnaires, including the HPDP and the DAU. If the sample person was 18–44 years of age, he or she was given the DAU to complete; no proxy responses were allowed. If the sample person was older than 44 years of age, information on drug and alcohol use was not obtained in that household. If the sample person ages 18–44 was not at home at the time the basic NHIS was administered, the interviewer attempted a return visit so that the sample person could complete the DAU. No telephone followup was permitted for the DAU. In certain circumstances, such as when language or literacy were problems or when the respondent requested that the questions be read, the Bureau of the Census interviewer could read the questions to the respondent.

Response rates

The overall response rate for the 1991 NHIS-DAU was 75.7 percent. The response rate for NHIS sample households was 95.7 percent; among persons identified in the household interview as being eligible for the DAU questionnaire, the response rate was 79.1 percent. The overall response rate is estimated as a product of these two rates (95.7 percent x 79.1 percent = 75.7 percent). Because sociodemographic characteristics of sample persons in nonresponding households are unknown, discussion of response rates for subgroups is limited to rates for those identified as eligible for the DAU questionnaire.

Response rates were noticeably higher for women (82.9 percent) than for men (74.5 percent) and somewhat higher for white persons (79.7 percent) than for black persons (76.9 percent). In terms of the age groups discussed in this report, response rates were about the same for persons 18–24 years (79.5 percent) and persons 25–34 years (80.0 percent); rates were somewhat lower for persons 35–44 years of age (77.9 percent). These response rates are lower than most NHIS special topic surveys. This may be due to the sensitive nature of the questions, or more likely, to the respondent rule that all followup contacts had to be made in person; no telephone followup was permitted as is typical for most NHIS special topic surveys. The relatively low response rate for the DAU may have been a factor in the overall reported drug use if heavy users were less likely to complete the questionnaire than were light users or nonusers.

Comparison to other national data on drug use

The primary purpose of the NHIS-DAU was to collect data to study relationships between drug use and the various health status indicators provided by the NHIS. Although the DAU was not intended to provide estimates of the prevalence of drug use, such estimates can be produced from the data. Comparisons to estimates from the National Household Survey on Drug Abuse (NHSDA), the Federal Government's ongoing primary source of drug use data, indicate that the NHIS-DAU generally found lower rates of use than the NHSDA. In interpreting prevalence estimates (and also analyses of the relationship between drug use and health status) from the NHIS-DAU, it is important to recognize the different estimates and to understand the methodological differences between the two surveys that may have caused some of the differences.

Both surveys cover the civilian noninstitutionalized population in the United States, but the NHIS included only 18–44-year-olds, while the NHSDA includes all persons age 12 and older. Because illicit drug use is highly correlated with age, any comparison between the two surveys must control for age, for example, by restricting NHSDA estimates to 18–44-year-olds. The 1991 NHSDA estimate of past year marijuana use among 18–44-year-olds was 15.2 percent compared with 9.3 percent from the NHIS. Past year cocaine prevalence was 5.1 percent from the NHSDA and 2.1 percent from the NHIS.

Even controlling for age, however, there are a number of methodological differences between the two surveys that could explain the inconsistent estimates. Research has shown that drug use prevalence estimates are highly sensitive to the data collection and estimation methods used (for example, mode of administration, privacy during interview, editing, and imputation) so different results could be expected. The following are the major methodological differences between the two surveys:

1. The NHIS was conducted January–December 1991 while the NHSDA was conducted January– June.
2. The questionnaires were different, not only in the wording of the drug

use questions but also in terms of the context. The NHIS-DAU is administered at the end of a comprehensive interview on health-related issues while the NHSDA questionnaire primarily focuses on various aspects of substance use and abuse. Although both surveys employed self-administered answer sheets for drug use questions, the NHIS-DAU was the only self-administered portion of the entire interview while the NHSDA included a series of nearly 20 separate self-administered answer sheets.

3. The fieldwork in the surveys was conducted by different organizations—NHIS by the Census Bureau and NHSDA by Research Triangle Institute.
4. Response rates for sample persons were different in the two studies—83.6 percent for 18–44-year-olds in the NHSDA and 79.1 percent for the NHIS-DAU. Household response rates were 96.5 percent in the NHSDA and 95.7 percent in the NHIS-DAU.
5. Editing, imputation, and nonresponse adjustment procedures were different in the two surveys.

Missing and unknown data

The DAU was self-administered and did not list "don't know" as a valid response to any question. As a result, in the final data set, one cannot distinguish between missing responses and "don't know" responses. For that reason, in this report, observations for which tabulation variables are unknown or missing are excluded from the calculations of percentages. For analyses related to the health status variables, fewer than 5 percent of cases had such values in any of the relevant data fields. Item nonresponse appears evenly distributed across the demographic groups shown in the tables related to health status variables. Much of the item nonresponse appears to reflect errors in completion of the questionnaire; for example, individuals who had denied use of marijuana simply skipped over the questions related to cocaine use.

For the questions related to problems associated with drug use, data on the percent of persons experiencing problems excludes persons who failed to respond to the pertinent questions despite having reported use of the pertinent drug. Exclusion of these observations makes the tacit assumption that the persons who failed to respond to the items would have answered them in a manner similar to those who responded. For items on past year marijuana-related problems, 10.4 to 11.0 percent of users did not respond and nonresponse for cocaine-related problems items ranged from 13.3 to 14.5 percent. Nonresponse on these items was largely accounted for by respondents who skipped blocks of questions. Nonresponse was reasonably similar for males and females and across age categories but differed by race. Black respondents were less likely than white respondents to complete all relevant questionnaire items. Disaggregations by race were not shown in the tables because the reduced sample sizes for black respondents for specific items increased the standard errors and may have increased the potential bias of the estimates for persons in that category. The overall estimates and estimates by sex and age may have some potential nonresponse bias, including possible bias resulting from the differential nonresponse across race categories.

Precision of the estimates

When producing estimates from any sample survey, two types of errors are possible—nonsampling error and sampling error. Nonsampling errors result from difficulties in the interpretation of the questionnaire, inability to recall information, reluctance to answer particular questions, coding errors, computer processing errors, and other errors. Nonsampling errors are reduced through use of improved questionnaires, data editing, and periodic retraining of interviewers.

The sampling error of an estimate is the error caused by the selection of a sample instead of a complete enumeration. The standard error and relative standard error are the primary measures of sampling error in sample surveys. The relative standard error, which is the standard error divided by the value of the estimate itself and expressed as a percent, is used as a criterion of precision. In this report, estimates that have a relative standard error of 30 percent or greater are shown with an asterisk (*) indicating that those estimates do not meet the DHIS standard of precision or reliability. Tables in this report include the standard errors.

Because of the complex design of the NHIS sample, SUDAAN (3) and SESUDAAN (4), computer programs for computing standard errors of rates (or percents) from complex samples were utilized.

Tests of significance

In this report, statistical inference is based on the two-sided test of hypothesis (H_0:P_1=P_2 versus H_1:$P_1 \neq P_2$) with a critical value of 1.96 (0.05 level of significance). Terms such as "higher" and "less" indicate that differences are statistically significant. Terms such as "similar" or "no difference" mean that no statistically significant difference exists between the estimates being compared. A lack of comment on the differences between any two estimates does not necessarily mean that the difference was tested and found not to be significant. In calculating the test statistics, the standard errors of the differences take into account the correlation between the categories being compared. To illustrate, the test statistic used to determine statistical significance was calculated as:

$$z = \frac{(p_1 - p_2)}{\mathrm{SE}\,(p_1 - p_2)}$$

where p_1 and p_2 are the two percents being compared and

$$SE\,(p_1 - p_2) = \sqrt{SE(p_1)^2 + SE(p_2)^2 - \rho \cdot SE\,(p_1) \cdot SE\,(p_2)}$$

is the standard error of the difference between p_1 and p_2 with ρ defined as the correlation between p_1 and p_2. The terms SE (p_1) and SE (p_2) are the standard error of p_1 and p_2, respectively. In this report, the difference between the two

estimates is said to be statistically significant if z is either greater than 1.96 or less than –1.96. Note that since SE (p_1-p_2) takes into account the correlation between the two estimates, calculations of test statistics based simply on the standard errors as shown in the tables of this report (i.e., ignoring the term $\rho \cdot SE(p_1) \cdot SE(p_2)$ in the expression for $SE(p_1-p_2)$) may not yield the same conclusions regarding statistical significance as those reflected in the discussion. In fact, if this correlation is positive, then the test will always be conservative. That is, results of the revised tests may not reject the null hypothesis ($H_0:P_1=P_2$) as often as they should.

A difference that is statistically significant does not necessarily correspond to a large or important difference. What it does imply is that one can conclude (with a small chance of being incorrect) that if a census was conducted, the estimates p_1 and p_2 would not be the same. A difference that is not statistically significant may have resulted from random fluctuations in the estimates due to selecting a sample instead of a census. Nonsampling errors such as response and nonresponse errors may also affect the outcome of significance tests.

Related documentation

More detailed discussion of the sample design of the NHIS, estimating procedures, procedures for estimating standard errors, nonsampling errors, and definitions of other sociodemographic terms used in this report has been published in Series 10 of *Vital and Health Statistics* (5).

A public use data file based on the 1991 DAU was released in May 1993. Information regarding its purchase may be obtained by writing to the Division of Health Interview Statistics, National Center for Health Statistics, 6525 Belcrest Road, Hyattsville, Maryland 20782.

Symbols

- - -	Data not available
. . .	Category not applicable
—	Quantity zero
0.0	Quantity more than zero but less than 0.05
Z	Quantity more than zero but less than 500 where numbers are rounded to thousands
*	Figure does not meet standard of reliability or precision (more than 30-percent relative standard error in numerator of percent or rate)

*U.S. Government Printing Office: 1994 — 301-050/80025

Suggested citation

Keer DW, Colliver JD, Kopstein AN, et al. Restricted activity days and other problems associated with use of marijuana or cocaine among persons 18–44 years of age: United States, 1991. Advance data from vital and health statistics; no 246. Hyattsville, Maryland: National Center for Health Statistics. 1994.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control and Prevention
National Center for Health Statistics
6525 Belcrest Road
Hyattsville, Maryland 20782

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

To receive this publication regularly, contact the National Center for Health Statistics by calling 301-436-8500

DHHS Publication No. (PHS) 94-1250

BULK RATE
POSTAGE & FEES PAID
PHS/NCHS
PERMIT NO. G-281