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and the observed rate of increase would parallel but not exceed changes in the states that did not alter their laws. Also, because the Monitoring the Future survey is administered in schools, any effect of decriminalization on marijuana use by out-of-school youth (who typically have higher levels of drug use[21]) would not have been reflected.

An additional consideration is provided by a recent analysis of marijuana decriminalization laws in the United States by Pacula et al.[22] They found that some states that are viewed as having decriminalized marijuana use have in fact retained a first-time marijuana offense as a criminal offense. In addition, many states that are characterized as not having decriminalized laws pertaining to marijuana use specify first-time marijuana possession offenses as noncriminal. These same authors found that youth living in states that lowered offenses for marijuana possession to below the felony level were more likely to report use of marijuana in the past month.[22]

Several territories in Australia have decriminalized use of marijuana. Studies comparing use in these territories with use in those that did not reduce penalties found no appreciable differences in use.[23,24]

The most widely scrutinized large-scale change in the legal status of marijuana occurred in The Netherlands. Dutch policy regarding decriminalization is very complex. Use of illegal drugs per se is not punishable by law, but possession for use is; drug dealing also is considered a felony.[25] Theoretically, one can be imprisoned for up to 1 month for possession of 5 g or less of cannabis, and promotion of marijuana through advertisements is forbidden also.

From 1984 to 1996, the period during which Dutch prosecution of marijuana-related offenses became virtually nonexistent, marijuana use increased consistently and substantially until 1992 while decreasing or remaining stable in other countries.[26,27] Among 18- to 20-year-olds, the proportion who reported ever having used marijuana increased from 15% to 44%, and the proportion who reported using it within the previous 30 days increased from 8.5% to 18.5%. Use among adolescents in the United States decreased steadily from 1979 to 1992. In Norway, which also forbids the sale of marijuana, use remained constant until 1992 and then increased. Use remained steady or decreased in Catalunya (Spain), Stockholm, Hamburg, and Denmark during this period. These figures strongly suggest that marijuana use was influenced by changes in Dutch policy during this period. However, the United States and Norway (Oslo) also experienced increases in use of marijuana from 1992 to 1996, and thus it is difficult to attribute any change in use among Dutch youth after 1992 to the country's drug policies.

The 1999 European School Survey Project on Alcohol and Drugs, specifically developed to provide data on European drug use comparable with that obtained by the Monitoring the Future surveys, revealed that the proportion of adolescents in The Netherlands who reported ever having used marijuana (28%) was substantially lower than that of 10th graders in the United States (41%). However, the European survey also indicated that Dutch use was higher than any other European country except Ireland, the United Kingdom, France, and the Czech Republic.[28]

MEDICAL MARIJUANA

Considerable anecdotal evidence suggests that marijuana may be effective in treating a number of medical conditions. This perspective has been an important force behind efforts to change the legal status of marijuana. Marijuana has been touted as ameliorating chemotherapy-induced nausea, wasting and anorexia associated with AIDS, intraocular pressure in glaucoma, and muscle spasticity arising from such conditions as multiple sclerosis. Two comprehensive reviews evaluating the scientific basis for these claims, one conducted by the Institute of Medicine (IOM) and the other by the American Medical Association, have been published recently.[29,30] Both reports acknowledge the lack of rigorous data to support the use of smoked marijuana as medicine while calling for additional research into the medical use of cannabinoids, especially those that could be delivered rapidly in a smoke-free manner. The IOM report noted that marijuana smoke delivers "harmful substances" as well as tetrahydrocannabinol to the body and that marijuana "plants cannot be expected to provide a precisely defined drug effect." "For these reasons," the IOM report concluded, "there is very little future in smoked marijuana as a medically approved medication. If there is any future in cannabinoid development, it lies with agents of more certain, not less certain, composition."

POTENTIAL EFFECT OF DECRIMINALIZATION OR LEGALIZATION ON US ADOLESCENTS

Although efforts to legalize marijuana are focused solely on adults (no one is proposing that use or possession of marijuana by adolescents should be legalized), any change in its legal status could nonetheless have an effect on adolescents. Alcohol (illegal for those under 21 years of age) and tobacco products (illegal under 18 years of age) are nonetheless the psychoactive substances most widely abused by adolescents. During 2003, 47.5% of 12th graders reported using alcohol in the past 30 days and 24.4% reported smoking cigarettes in the past 30 days.[31]

Legalization of marijuana could result in advertising campaigns for its use, some of which might be directed toward adolescents. Control measures to prevent advertising to young people, as recent experience demonstrates, may be difficult to implement. As revealed during the course of the Comprehensive Tobacco Settlement negotiations, tobacco companies systematically have marketed their products to young people even while disavowing any efforts to do so. Even after the Comprehensive Tobacco Settlement was implemented (which prohibited any youth-oriented advertising), tobacco companies continued marketing to young people. A recent study noted that cigarette advertising in youth-oriented magazines increased by $54 million after the Tobacco Master Settlement Agreement.[32] Another study showed that advertising of youth brands of ciga-

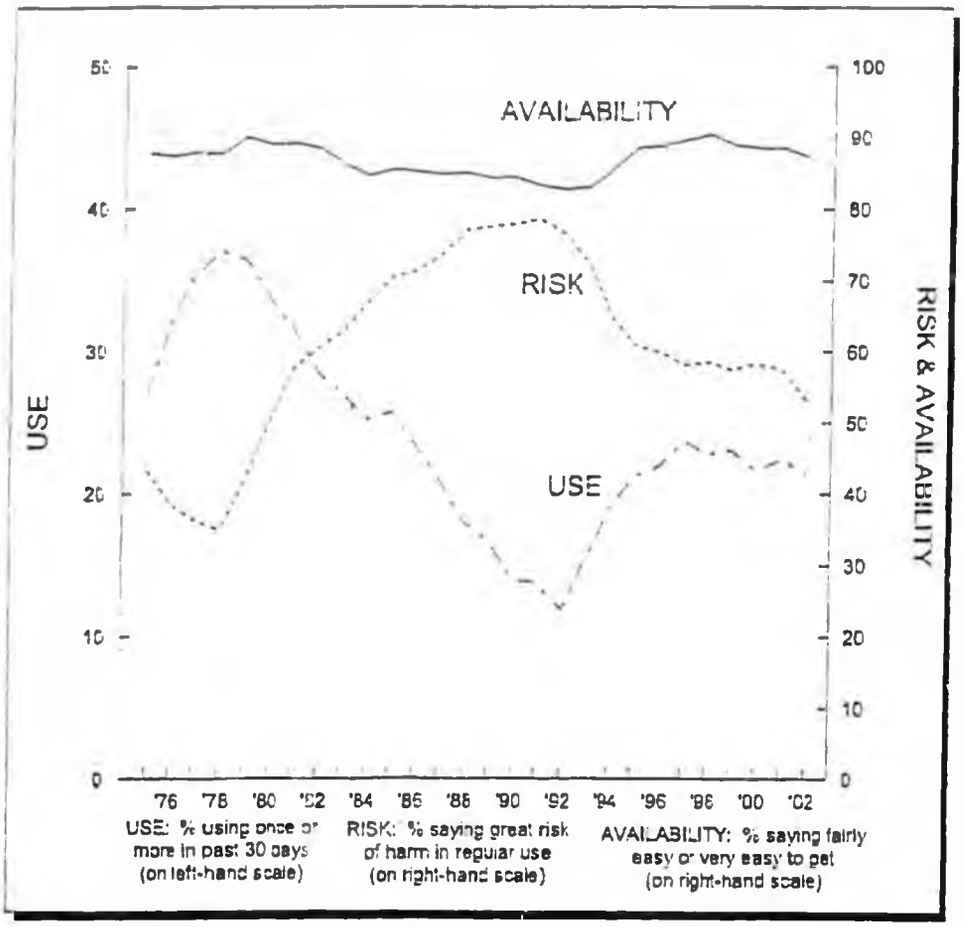
rettes (defined as those smoked by >5% of 8th, 10th, and 12th graders in 1998) in youth-oriented magazines increased from 1995 to 2000, as did expenditures for adult brands in youth-oriented magazines.[33] The Supreme Court recently struck down several Massachusetts regulations aimed at protecting schoolchildren from tobacco advertising (including bans on tobacco ads within 1000 feet of a school or playground). "The state's interest in preventing underage tobacco use is substantial and even compelling, but it is no less true that the sale and use of tobacco by adults is a legal activity," wrote Justice Sandra Day O'Connor for the majority. She continued, "... tobacco retailers and manufacturers have an interest in conveying truthful information about their products to adults, and adults have a corresponding interest in receiving truthful information about tobacco products."[34] Presumably, these same interests in regard to advertising for marijuana products also would be protected.

DiFranza[35] has demonstrated that both the states and the federal government are poorly enforcing the Synar Amendment, which requires states to control the sale of tobacco products to those younger than 18 years. Legalization of marijuana for adults but not adolescents would necessitate additional law enforcement burdens on a system that currently is not meeting its regulatory obligations.

Similarly, the alcoholic-beverage industry continues to portray drinking in terms that clearly appeal to young people. Drinking is associated with being sexy, popular, and fun and as an ideal means to "break the ice" in social settings.[36] These portrayals are extremely enticing to adolescents, who are in the process of developing their own identities as well as refining their social skills. One can speculate that distributors of marijuana quickly would recognize the profitability of portraying marijuana in a similar manner (thereby maximizing sales), all the while protesting that their marketing attempts seek only to induce adults to change brands.

How adolescents would perceive a change in the legal status of marijuana, even if only for adults, also is difficult to determine. However, recent studies have shown that prevalence of adolescent marijuana use is inversely proportional to the perceived risk associated with use (Fig 1).[37] The proportion of 12th graders who reported using marijuana in the past 30 days peaked in 1978 and again in 1997, exactly the years in which the perceived risk of regular use was at its lowest.

Some research suggests that legal sanctions may



Source: Johnston LD, O'Malley PM, Bachman JG. Monitoring the Future: National Survey Results on Drug Use, 1975-2002. Vol I: Secondary School Students. Bethesda, MD: National Institute on Drug Abuse; 2003

Fig 1. Marijuana: trends in perceived availability, perceived risk of regular use, and prevalence of use in past 30 days for 12th graders

influence the initial decision to use drugs and that this influence diminishes as drug use by individuals progresses.[38] If so, it is the youngest adolescents (those who have not yet tried marijuana or are in the experimentation phase) who would be affected most by changes in marijuana laws. Age at first use is, in turn, a risk factor for problem use in the future.[39]

Moral development in children and adolescents assumes a developmental trajectory. Early adolescents have a concrete approach to morality: laws are obeyed to avoid punishment. As such, young adolescents would be most susceptible to the deterrent effects of drug laws. This deterrent effect could disappear or lessen with legalization of marijuana. Once adolescents gain the ability to think abstractly, challenges to the apparent hypocrisy of "do as I say, not as I do" can be anticipated.

Parental drug use is an important influence on adolescents' drug use.[40] Recent data indicate that easy household access to illicit substances is associated with greater risk of marijuana use among both younger and older adolescents.[41] Some adults may choose not to use marijuana (however they may feel about the law), because the potential risk of criminal sanctions outweighs any perceived benefit from using the drug. With the demise of legal sanctions against use, some parents may choose to begin using marijuana, acting as an important new source of exposure for their adolescents. Parental use of marijuana in the last year is associated with their adolescent's use during the same period.[42]

Availability of marijuana, which might increase if the drug were legalized, clearly has been shown to affect adolescents' use. Adolescents who have been offered marijuana are 7 times more likely to use it than are those who have not been offered marijuana. Similarly, those who report that marijuana is easy to get are approximately 2.5 times more likely to use it than those who consider it hard to get.[43]

Marijuana is cheap and easy to produce; if it were legalized, its price likely would decrease below current levels. Work by Pacula et al[44] in the United States and Williams[45] in Australia demonstrates clearly that a decrease in the price of marijuana is associated with a significant increase in the prevalence of use among adolescents.

Some advocates for the legalization of marijuana argue that it is safer than alcohol. They suggest that increased use of marijuana by young people might have a positive effect if some adolescents switched from alcohol to marijuana (a substitution effect). This theory cannot be supported by recent studies on adolescent marijuana and alcohol use that incorporated the price of marijuana into the analysis. These studies conclude that an increase in use of marijuana by adolescents would result in an increased use of alcohol (ie, that the 2 drugs are economic complements).[46]

From a public health perspective, even a small increase in use, whether attributable to increased availability or decreased perception of risk, would have significant ramifications. For example, if only an additional 1% of 15- to 19-year-olds in the United States began using marijuana, there would be approximately 190 000 new users.[47]

COMPARISONS BETWEEN MARIJUANA, ALCOHOL, AND TOBACCO

Proponents of legalization of marijuana argue that in terms of costs to society, both financial and health-related, alcohol and tobacco cause far more harm than does marijuana. They argue that classifying a relatively benign drug (marijuana) as schedule I and vigorously prosecuting its sale and possession while permitting the legal use of substances that cause far more damage are inconsistent and illogical practices or policies. That alcohol and tobacco cause far more harm in our society than marijuana is undeniable, but it does not follow logically that yet a third addictive psychoactive drug (marijuana) should be legalized. Many of the harms associated with alcohol and tobacco use stem from the widespread acceptability, availability, and use of these substances. Still other harms result from lax enforcement of current laws regulating their use or sale, especially to underage youth. Rather than legalizing marijuana, an equally compelling approach would be vigorously enforcing current regulations regarding sale and use of alcohol and tobacco products to minimize health-related problems attributable to their consumption. Recent examples include lowering the blood alcohol concentration that defines whether an individual is driving while intoxicated to 0.08 mg/dL (0.02 mg/dL for youth), limiting or banning smoking in public places, and banning cigarette advertisements targeted toward young people.

SUMMARY

Several recent studies concerning American adolescents, the Dutch experience with decriminalization (from 1984 to 1992), and the relationship between cheaper marijuana and use by adolescents suggest that decriminalization increases marijuana use by adolescents. Because no country has legalized use of marijuana outright, there are no studies available to evaluate the potential effect of legalization in the United States. Legalization of marijuana could decrease adolescents' perceptions of the risk of use and increase their exposure to this drug. Furthermore, data concerning adolescents' use of the 2 drugs that are legal for adults (alcohol and tobacco) suggest strongly that legalization of marijuana would have a negative effect on youth. Alcohol and tobacco are the drugs most widely abused by adolescents, although their sale to adolescents (younger than 18 years for tobacco and younger than 21 years for alcohol) is illegal. Research demonstrates that manufacturers of alcohol and tobacco market their products to young people, and the recent Supreme Court decision and experience with the Synar Amendment suggest that, if marijuana were legalized, restrictions on the sale and advertising of the substance to young people would prove daunting. Finally, two in-depth reviews of medical marijuana conclude that future research should focus on the medical use of cannabinoids, not smoked marijuana.

Recommendations from the AAP are included in the accompanying policy statement.[48]

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Legalization of Marijuana: Potential Impact on Youth
Alain Joffe, W. Samuel Yancy and the Committee on Substance Abuse and Committee on Adolescence
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ORIGINAL CONTRIBUTION

Prevalence of Marijuana Use Disorders in the United States

1991-1992 and 2001-2002

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Context Among illicit substance use disorders, marijuana use disorders are the most prevalent in the population. Yet, information about the prevalence of current *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM-IV*) marijuana use disorders and how prevalence has changed is lacking.

Objective To examine changes in the prevalence of marijuana use, abuse, and dependence in the United States between 1991-1992 and 2001-2002.

Design, Setting, and Participants Face-to-face interviews were conducted in 2 large national surveys conducted 10 years apart: the 1991-1992 National Longitudinal Alcohol Epidemiologic Survey ([NLAES] n=42862) and the 2001-2002 National Epidemiologic Survey on Alcohol and Related Conditions ([NESARC] n=43093).

Main Outcome Measures Rates of past year marijuana use, abuse, and dependence.

Results Among the adult US population, the prevalence of marijuana use remained stable at about 4.0% over the past decade. In contrast, the prevalence of *DSM-IV* marijuana abuse or dependence significantly ($P=.01$) increased between 1991-1992 (1.2%) and 2001-2002 (1.5%), with the greatest increases observed among young black men and women ($P<.001$) and young Hispanic men ($P=.006$). Further, marijuana use disorders among marijuana users significantly increased ($P=.002$) in the absence of increased frequency and quantity of marijuana use, suggesting that the concomitant increase in potency of delta-9-tetrahydrocannabinol (Δ^9-THC) may have contributed to the rising rates.

Conclusions Despite the stability in the overall prevalence of marijuana use, more adults in the United States had a marijuana use disorder in 2001-2002 than in 1991-1992. Increases in the prevalence of marijuana use disorders were most notable among young black men and women and young Hispanic men. Although rates of marijuana abuse and dependence did not increase among young white men and women, their rates have remained high. The results of this study underscore the need to develop and implement new prevention and intervention programs targeted at youth, particularly minority youth.

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MARIJUANA HAS BEEN THE most common illicit substance used in the United States for several decades.[1,2] Understanding changes in the use of marijuana over time is important for a number of reasons. Marijuana use is associated with impaired educational attainment,[3] reduced workplace productivity,[4] and increased risk of use of other substances.[5] Marijuana use plays a major role in motor vehicle crashes[6] and has adverse effects on the respiratory and cardiovascular systems.[7-10]

Marijuana use also is a necessary, although not a sufficient, condition for developing marijuana abuse and dependence as defined in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM-IV*), which are clear indicators of problems in and of themselves.[11] *Marijuana abuse* is defined in the *DSM-IV* as repeated instances of use under hazardous conditions, repeated, clinically meaningful impairment in social/occupational/educational functioning, or legal problems related to marijuana use. *Marijuana dependence* is defined in the *DSM-IV* as increased tolerance, compulsive use, impaired control, and continued use despite physical and psychological problems caused or exacerbated by use. Beyond the seriousness of these disorders in their own right, marijuana abuse and dependence increase the risk of other serious consequences, most significantly, major mood, anxiety, and personality psychopathology.[12-14]

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Despite the seriousness of *DSM-IV* marijuana abuse and dependence, no long-term trend information is available about whether the prevalence of these disorders is increasing, decreasing, or remaining stable in the United States. Such information was recently added to the National Household Survey on Drug Abuse, but this has only been since 2000.[1] For public health efforts, accurate information on changes in potentially vulnerable groups may highlight the need for focused planning on both a national and local level and form the basis of rational, scientifically based prevention and intervention programs. The current study was designed, in part, to address this gap.

To assess changes in marijuana use, abuse, and dependence in the US population, we compared data from the 1991-1992 National Longitudinal Alcohol Epidemiologic Survey ([NLAES] n=42862) and the 2001-2002 National Epidemiologic Survey on Alcohol and Related Conditions ([NESARC] n=43093).[15,16] Both surveys were conducted by the National Institute on Alcohol Abuse and Alcoholism (NIAAA). Because changes in the prevalence of marijuana use may not reflect changes in the prevalence of marijuana use disorders, rates are presented separately for marijuana use and abuse or dependence in the total population. To assess the risk of marijuana abuse or dependence independent of these baseline rates, conditional rates of past-year marijuana abuse or dependence among users also are presented.

METHODS

Samples

Both the 1991-1992 NLAES and the 2001-2002 NESARC are nationally representative samples of the adult population of the United States and have been described in detail elsewhere.[15,16] The target population for each survey was the civilian noninstitutionalized population, 18 years and older, residing in the United States. The fieldwork for both studies was conducted by the US Census Bureau, under the direction of NIAAA staff. For the NESARC, the overall survey response rate was 81% and for the NLAES, 90%.

The NESARC's sample consisted of 655 primary sampling units (PSUs); however, in the final NESARC datafile, only 435 PSUs are shown because smaller PSUs were collapsed to minimize disclosure risks. The NLAES sample consisted of 198 PSUs. Oversampling of blacks and Hispanics in the NESARC and of blacks in the NLAES, completed at the design phase, increased the proportion of each of these groups in the total samples. In the final selection phase, 1 individual was randomly selected from a list of persons living in the household. At this stage of the survey, young adults (ages 18-24 years in the NESARC and ages 18-29 years in the NLAES) were oversampled at a rate of 2.25:1.00.

The complex sampling design necessitated weighting the data from both surveys to reflect the probability of the following: selection of a PSU within stratum, selection of housing units within the sample PSU, oversampling of young adults, and nonresponse at the household and person levels. The NESARC data were also adjusted to reduce the variance arising from selecting 2 PSUs to represent an entire stratum. The weighted data for both groups were then adjusted to be representative of the US population for a variety of socioeconomic variables including region, age, sex, and race/ethnicity using the Decennial Census of Population and Housing (1990 for the NLAES and 2000 for the NESARC). All potential NESARC respondents were informed in writing about the nature of the survey, the statistical uses of the survey data, the voluntary aspect of their participation, and the federal laws that rigorously provided for the strict confidentiality of the identifiable survey information. Those respondents consenting to participate after receiving this information were interviewed. The research protocol, including informed consent procedures, received full ethical review and approval from the US Census Bureau and US Office of Management and Budget.

Interviewers and Training

All interviews for both the NLAES and NESARC were conducted by professional interviewers from the US Census Bureau. On average, the 1000 NLAES and 1800 NESARC interviewers had 5 years of survey administration experience. All completed a 5-day self-study course followed by a 5-day in-person training session at one of the US Census Bureau's 12 regional offices.

Quality of interviewing was ensured by regional supervisors who recontacted a random 10% of all respondents by telephone and reasked a set of 30 questions from different parts of the interview to verify answers.

Diagnostic Assessment

All diagnoses in the NLAES and NESARC were made according to the criteria of the *DSM-IV* using the NIAAA *Alcohol Use Disorder and Associated Disabilities Interview Schedule-DSM-IV Version* (*AUDADIS-IV*), a fully structured diagnostic interview designed for use by professional interviewers who are not clinicians.[17] Although the *DSM-IV* classification was not published until 1994, proposed diagnostic criteria for *DSM-IV* marijuana abuse and dependence were published by the American Psychiatric Association prior to the fieldwork for the NLAES and were incorporated into the *AUDADIS-IV* in their entirety.[18] What was not known at the time was which diagnostic criteria would be assigned to the abuse or dependence categories. However, since all proposed *DSM-IV* diagnostic criteria had been incorporated into the *AUDADIS-IV*, computer algorithms were able to produce diagnoses of abuse and dependence that accurately represented the placement of the criteria within abuse and dependence categories of the final *DSM-IV* revision.

The NLAES and NESARC included the same core questions to assess marijuana abuse and dependence. One minor difference is that, in the NLAES, duration associated with a particular criterion was assessed separately from the criterion itself. For example, if a respondent endorsed a particular crite-

rion symptom for marijuana, the next question asked whether that criterion had happened more than once with marijuana. In the NESARC, duration associated with marijuana abuse and dependence criteria was embedded directly into the symptom questions. Another difference is that, in the NLAES, the *AUDADIS-IV* was administered using a paper-and-pencil instrument, while in the NESARC, the *AUDADIS-IV* was computerized and responses were entered directly into laptop computers. However, in both studies, all questions were asked by highly trained interviewers. Thus, the computerization did not change the way respondents were exposed to the questions.

In the *AUDADIS-IV*, symptom questions associated with *DSM-IV* abuse and dependence were asked separately for marijuana and each other substance. Consistent with *DSM-IV*, past-year diagnoses of marijuana abuse required a respondent to report at least 1 of the 4 criteria of marijuana abuse within the 12 months prior to the interview.[11] These included recurrent marijuana use resulting in failure to fulfill major role obligations, recurrent marijuana use in physically hazardous situations, recurrent marijuana-related legal problems, and continued marijuana use despite having persistent or recurrent social or interpersonal problems caused by or exacerbated by use. The diagnosis of marijuana dependence required that at least 3 criteria from a list of 6 during the preceding 12 months be met: (1) need for increased amounts of marijuana to achieve the desired effect or markedly diminished effect with continued use of the same amount of marijuana; (2) using marijuana in larger amounts or over a longer period than intended; (3) persistent desire or unsuccessful efforts to cut down or reduce marijuana use; (4) a great deal of time spent obtaining, using, or recovering from the effects of marijuana; (5) giving up important social, occupational, or recreational activities in favor of using marijuana; and (6) continued marijuana use despite persistent or recurrent physical or psychological problems caused or exacerbated by use.

Consistent with the *DSM-IV*, diagnoses of marijuana abuse and dependence were mutually exclusive. A marijuana dependence diagnosis preempts a diagnosis of marijuana abuse. Thus, respondents classified with marijuana abuse had marijuana abuse only, and respondents classified as dependent included those who were dependent with and without abuse. Because the *DSM-IV* does not include specific criteria for marijuana withdrawal, no criterion for marijuana withdrawal is included in the diagnosis and the typical list of 7 *DSM-IV* dependence criteria is reduced to 6 criteria for marijuana. While a number of studies have indicated that a withdrawal syndrome can be defined and assessed for marijuana,[19,20] this point has not yet been fully resolved. Our method of diagnosing marijuana dependence is therefore consistent with the *DSM-IV* in its current standard form.

The reliability and validity of the *AUDADIS-IV* are well documented in numerous national and international psychometric studies conducted in clinical, and particularly in general, population studies, the population for which it was designed.[21-32] The psychometric properties of the *AUDADIS-IV* alcohol and drug modules also were shown to be good in numerous countries in the World Health Organization/National Institutes of Health Joint Project on Reliability and Validity.[22,23,28-32]

Data Analysis

To account for the complex sample designs of both the NLAES and NESARC, SUDAAN software was used to estimate standard errors of all prevalence estimates in both studies across sex, age, and race-ethnic subgroups of the population.[33] Prevalence estimates and standrad errors, derived separately for the NLAES and NESARC, were compared using *t* tests designed for independent samples. To take into account the sampling design, all standard errors of the prevalence estimates were calculated using SUDAAN, a software program that uses Taylor series linearization to make adjustments for weighted data. In all cases, results are not displayed when standard errors are greater than or equal to 50% of the weighted prevalence because these are too imprecise to be reliable.

RESULTS

Past-Year Marijuana Use

Past-year marijuana use was reported by 4.0% of the respondents in the 1991-1992 NLAES and 4.1% of the respondents in the 2001-2002 NESARC (TABLE 1). Marijuana use did not significantly increase in the full sample or among males or females, or among whites, blacks, or Hispanics overall. However, some subgroups did show significant increases and no subgroups showed significant decreases. Increased rates of marijuana use were observed among 18- to 29-year-old black and Hispanic women. The prevalence of marijuana use also increased significantly over the last decade among 45- to 64-year-old men and women overall and white men and black women in this age group.

Past-Year Marijuana Abuse and Dependence

In both the NLAES and NESARC, past-year marijuana abuse was more common than dependence. For the total population in 1991-1992 (the NLAES), past-year prevalence of marijuana abuse was 0.9% and dependence was 0.3%. Similarly, in 2001-2002 (the NESARC), past-year marijuana abuse was reported by 1.1% and dependence by 0.4%. This pattern of abuse, representing approximately 75% to 80% of the total marijuana use disorder cases, was consistent across age, sex, and race-ethnic subgroups, and all further results are described for combined abuse and dependence rates (TABLE 2). For instance, in the total population, past-year prevalence of marijuana abuse or dependence increased from 1.2% in 1991-1992 to 1.5% in 2001-2002 ($P = .01$). This can be translated into an increase from 2.2 million to 3.0 million, respectively, in terms of population estimates.

While most subgroups showed increases over the decade, these reached statistical significance for females, blacks, Hispanics, and those ages 18 to 29 years and 45 to 64 years overall, for 18- to 29-year-old women, for 45- to 64-year-old men, for black men and women overall, for 18- to-29-year-old black men and women, and for Hispanic men and Hispanics ages 18 to 29 years overall as well as 18- to-29-year-old Hispanic men.

Past-Year Marijuana Abuse and Dependence Among Past-Year Marijuana Users

Among past-year marijuana users, overall rates of past-year abuse or dependence increased from 30.2% in 1991-1992 to 35.6% in 2001-2002 ($P<.01$) (TABLE 3). Almost without exception, the conditional rates of abuse or dependence were larger in the more recent survey, although not all increases were significant. However, significant increases in the prevalence of marijuana abuse or dependence among users were found for both males (33.9% to 38.9%) and females (22.7% to 29.2%), and most notably among 18- to 29-year-old black men (21.8% to 43.0%), 18- to 29-year-old black women (19.1% to 47.2%), and 18- to 29-year-old Hispanic men (29.8% to 53.7%).

COMMENT

The results of this study show that marijuana use in the total adult population has remained substantially unchanged over the decade from 1991-1992 to 2001-2002. However, significant increases in use among some subgroups are important to note, for instance, young black and Hispanic women. In contrast to the results for use among the overall population, rates of abuse or dependence increased from 1991-1992 to 2001-2002. What is perhaps even more significant is that marijuana abuse or dependence increased among marijuana users by 18% from 30.2% in 1991-1992 to 35.6% in 2001-2002.

These results, taken together, suggest that factors affecting addiction potential are operating to produce the increase in prevalence in marijuana abuse or dependence. A number of factors could have led to increases in addiction potential, operating either independently or conjointly. The first is increased marijuana potency. The potency of delta-9-tetrahydrocannabinol

Table 1. Past-Year Prevalence of Marijuana Use, NLAES 1991-1992 and NESARC 2001-2002*

Sociodemographic Characteristic	Men		Women		Total	
	NLAES, % (SE)	NESARC, % (SE)	NLAES, % (SE)	NESARC, % (SE)	NLAES, % (SE)	NESARC, % (SE)
Total	5.5 (0.22)	5.6 (0.24)	2.5 (0.12)	2.6 (0.14)	4.0 (0.13)	4.1 (0.15)
Age group, y						
18-29	12.1 (0.68)	13.3 (0.72)	6.4 (0.37)	7.8 (0.50)†	9.3 (0.41)	10.5 (0.47)†
30-44	6.1 (0.35)	5.8 (0.42)	2.8 (0.20)	2.6 (0.22)	4.4 (0.20)	4.1 (0.24)
45-64	0.8 (0.15)	2.5 (0.26)‡	0.3 (0.07)	0.7 (0.10)‡	0.6 (0.08)	1.6 (0.14)‡
≥65		0.1 (0.04)	0.0 (0.00)	0.0 (0.00)		0.0 (0.00)
White						
Total	5.7 (0.25)	5.7 (0.29)	2.7 (0.14)	2.6 (0.17)	4.2 (0.15)	4.1 (0.17)
Age group, y						
18-29	13.9 (0.81)	15.1 (0.98)	7.7 (0.50)	8.6 (0.66)	10.8 (0.51)	11.8 (0.61)
30-44	6.5 (0.39)	6.2 (0.53)	3.1 (0.24)	2.9 (0.30)	4.8 (0.23)	4.5 (0.31)
45-64	0.8 (0.17)	2.5 (0.31)‡	0.3 (0.09)	0.6 (0.12)	0.5 (0.09)	1.6 (0.17)‡
≥65			0.0 (0.00)	0.0 (0.00)		
Black						
Total	6.1 (0.66)	6.9 (0.73)	2.1 (0.26)	3.0 (0.32)†	3.9 (0.34)	4.7 (0.[illegible])
Age group, y						
18-29	10.4 (1.50)	14.2 (1.94)	3.4 (0.59)	6.8 (0.97)‡	6.6 (0.79)	10.1 (1.03)‡
30-44	6.8 (1.20)	6.4 (1.01)	3.0 (0.51)	3.0 (0.52)	4.7 (0.62)	4.5 (0.51)
45-64	1.8 (0.66)	3.0 (0.76)	0.3 (0.14)	1.1 (0.32)*	1.0 (0.31)	1.9 (0.37)†
≥65	0.0 (0.00)		0.0 (0.00)	0.0 (0.00)	0.0 (0.00)	0.2 (0.11)
Hispanic						
Total	3.9 (0.61)	4.6 (0.51)	1.3 (0.25)	2.1 (0.34)	2.6 (0.34)	3.3 (0.31)
Age group, y						
18-29	6.3 (1.22)	8.7 (1.03)	2.7 (0.63)	5.1 (0.90)†	4.5 (0.70)	7.1 (0.71)†
30-44	4.3 (1.13)	3.3 (0.63)	0.8 (0.30)	0.9 (0.30)	2.6 (0.63)	2.1 (0.35)
45-64		1.0 (0.32)				0.7 (0.19)
≥65	0.0 (0.0)	0.0 (0.00)	0.0 (0.00)	0.0 (0.00)	0.0 (0.00)	0.0 (0.00)
Total§	n = 982	n = 996	n = 640	n = 607	n = 1622	n = 1603

Abbreviations: NESARC, National Epidemiologic Survey on Alcohol and Related Conditions; NLAES, National Longitudinal Alcohol Epidemiologic Survey.
*Ellipses indicate that the estimate does not meet precision standard.
†$P<.05$, 1991-1992 compared with 2001-2002.
‡$P<.01$, 1991-1992 compared with 2001-2002.
§Unweighted number of past-year marijuana users in each group.

(Δ^9-THC) in confiscated marijuana from police seizures increased by 66% from 3.08% in 1992 to 5.11% in 2002.[34,35] Average potency of Δ^9-THC in these studies was consistently calculated as the simple arithmetic mean (ie, the sum of the Δ^9-THC concentrations divided by the number of seizures), which is more useful in discerning changes over time relative to normalized averages. This increase could have led to greater addiction potential for marijuana use disorders over the last decade. Moreover, there was no systematic change in the frequency of marijuana use between 1991-1992 and 2001-2002: use every day or nearly every day (18.7% and 21.7%), use 1 to 4 times per week (23.8% and 19.7%), use 1 to 3 times per month (22.6% and 20.2%), and 1 to 11 times per year (34.9% and 38.4%). Similarly, very little change in the usual quantity (ie, number of joints or joint equivalents) of marijuana used on smoking days was observed for each time period: 1 joint (65.6% and 63.7%), 2 to 3 joints (26.9% and 22.0%), 4 to 6 joints (4.0% and 8.1%), and 7 or more joints (3.5% and 6.2%). Increasing rates of marijuana use disorders among marijuana users in the absence of increased quantity and frequency of use strengthens the argument that the increasing rates may be attributable, in part, to increased potency of marijuana.

The increased prevalence of marijuana use disorders among marijuana users also may be due, in part, to increases in marijuana use among the youngest individuals observed in this and other studies (such as the Monitoring the Future and the National Survey of Drug Use and Health studies) during the past decade.[1,2] The early onset of drug use has been consistently associated with greater risk of the development of abuse and dependence.[3,36,37] Thus, the marked increase in marijuana use among the youngest age group may be linked to the increases in abuse and dependence. These factors, combined with factors increasing rates of marijuana use in certain subgroups, are all possible explanations of the increased prevalence in rates of marijuana abuse and dependence among marijuana users.

One of the most striking findings of this study was that the rates of marijuana use disorders did not increase among white young adults (ages 18-29 years), but did increase among young

Table 2. Past-Year Prevalence of *DSM-IV* Marijuana Abuse or Dependence, NLAES 1991-1992 and NESARC 2001-2002*

Sociodemographic Characteristic	Men		Women		Total	
	NLAES, % (SE)	NESARC, % (SE)	NLAES, % (SE)	NESARC, % (SE)	NLAES, % (SE)	NESARC, % (SE)
Total	1.9 (0.14)	2.2 (0.14)	0.6 (0.05)	0.8 (0.07)†	1.2 (0.07)	1.5 (0.08)†
Age group, y						
18-29	5.1 (0.46)	6.4 (0.51)	1.6 (0.18)	2.5 (0.27)‡	3.3 (0.26)	4.4 (0.30)‡
30-44	1.5 (0.16)	1.7 (0.19)	0.6 (0.09)	0.7 (0.11)	1.0 (0.09)	1.2 (0.12)
45-64	0.2 (0.08)	0.7 (0.15)‡		0.2 (0.06)	0.1 (0.04)	0.4 (0.08)‡
≥65	0.0 (0.00)		0.0 (0.00)	0.0 (0.00)	0.0 (0.00)	
White						
Total	2.1 (0.17)	2.1 (0.17)	0.6 (0.06)	0.7 (0.08)	1.3 (0.09)	1.4 (0.10)
Age group, y						
18-29	6.3 (0.60)	7.2 (0.69)	2.0 (0.25)	2.7 (0.37)	4.2 (0.35)	4.9 (0.39)
30-44	1.6 (0.19)	1.7 (0.25)	0.6 (0.60)	0.7 (0.15)	1.1 (0.11)	1.2 (0.15)
45-64		0.7 (0.16)				0.4 (0.08)
≥65	0.0 (0.00)	0.0 (0.00)	0.0 (0.00)	0.0 (0.00)	0.0 (0.00)	0.0 (0.00)
Black						
Total	1.3 (0.28)	2.6 (0.40)‡	0.4 (0.10)	1.2 (0.22)‡	0.8 (0.14)	1.8 (0.22)‡
Age group, y						
18-29	2.2 (0.71)	6.1 (1.19)‡	0.7 (0.21)	3.2 (0.66)‡	1.4 (0.34)	4.5 (0.67)‡
30-44	1.4 (0.48)	2.3 (0.56)	0.6 (0.23)	1.0 (0.34)	1.0 (0.26)	1.6 (0.30)
45-64						0.4 (0.17)
≥65	0.0 (0.00)		0.0 (0.00)	0.0 (0.00)	0.0 (0.00)	
Hispanic						
Total	0.9 (0.26)	2.0 (0.30)‡	0.3 (0.10)	0.4 (0.10)	0.6 (0.14)	1.2 (0.17)‡
Age group, y						
18-29	1.9 (0.65)	4.7 (0.79)‡	0.6 (0.25)	0.9 (0.27)	1.2 (0.35)	2.9 (0.46)‡
30-44		0.9 (0.41)			0.4 (0.17)	0.5 (0.21)
45-64			0.0 (0.00)			
≥65	0.0 (0.00)	0.0 (0.00)	0.0 (0.00)	0.0 (0.00)	0.0 (0.00)	0.0 (0.00)

Abbreviations: *DSM-IV*, *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*; NESARC, National Epidemiologic Survey on Alcohol and Related Conditions; NLAES, National Longitudinal Alcohol Epidemiologic Survey.
*Ellipses indicate that estimate does not meet precision standard.
†$P < .05$, 1991-1992 compared with 2001-2002.
‡$P < .01$, 1991-1992 compared with 2001-2002.

adult black men and women and among young adult Hispanic men. It should also be noted that the prevalences of marijuana use disorders among white young adults have remained high, even though these rates have not significantly increased over the last decade.

The reasons for the rise in marijuana use disorders among these minority youth are not entirely known. Recently, researchers have highlighted the deleterious effects of acculturation on marijuana and other drug use disorders among the growing number of Hispanics faced with adapting to a new culture.[38,39] Lower educational and occupational expectations among minorities have also been implicated in this research. Alternatively, the growing number of minority youth attending college over the last decade might have been exposed to the risks of marijuana use commonly noted among college students, among whom the prevalence of past year marijuana use has increased from 23.0% to 30.0% over the last decade.[40,41]

What is clear is that no single environmental factor can explain the increases in marijuana use disorders observed in this study among certain minority subgroups of the population. Numerous environmental factors, including sociodemographic (increases in single-parent households, urbanicity), socioeconomic (education, income), individual lifestyle (grades, truancy, religious commitment), and economic factors, are all likely to serve as mediators of the observed changes.[42,43] A recent study also has demonstrated that decreases in the perceived risk of harmfulness and in disapproval of marijuana use can explain the recent historic changes in marijuana use among youth.[44] With regard to putative economic factors, recent studies have examined how changes in prices, taxes, and policies affecting tobacco and alcoholic beverages may have had an impact on the prevalence of marijuana use disorders.[44] For example, one study has shown that increases occurring over the past decade in the minimum drinking age had the unintended consequence of increasing marijuana use among high school seniors.[45] Further research on how prices and policies affecting tobacco and alcoholic beverages can affect marijuana use among important subgroups of the population defined in terms of race/ethnicity and other sociodemographic and socioeconomic characteristics is sorely needed and may help

Table 3. Past-Year Prevalence of *DSM-IV* Marijuana Abuse or Dependence Among Past-Year Marijuana Users, NLAES 1991-1992 and NESARC 2001-2002*

Sociodemographic Characteristic	Men		Women		Total	
	NLAES, % (SE)	NESARC, % (SE)	NLAES, % (SE)	NESARC, % (SE)	NLAES, % (SE)	NESARC, % (SE)
Total	33.9 (1.83)	38.9 (1.86)†	22.7 (1.92)	29.2 (2.03)‡	30.2 (1.35)	35.6 (1.37)‡
Age group, y						
18-29	41.6 (2.46)	47.8 (2.66)†	25.4 (2.59)	32.2 (2.78)†	36.0 (1.97)	42.1 (1.97)†
30-44	23.7 (2.22)	29.2 (3.25)	19.6 (2.94)	25.0 (3.81)	22.4 (1.79)	27.9 (2.63)†
45-64	22.1 (8.89)	27.0 (4.83)		21.7 (6.99)	16.9 (6.51)	25.8 (4.22)
≥65	0.0 (0.00)				0.0 (0.00)	
White						
Total	36.7 (2.17)	37.6 (2.34)	22.1 (2.10)	27.9 (2.72)†	31.8 (1.63)	34.4 (1.81)
Age group, y						
18-29	45.7 (2.90)	47.4 (3.29)	25.5 (2.91)	30.8 (3.64)	38.6 (2.36)	41.3 (2.45)
30-44	25.2 (2.52)	27.8 (3.76)	18.2 (3.10)	25.3 (4.73)	22.9 (2.01)	27.0 (3.11)
45-64	19.0 (10.73)	26.1 (5.26)				24.0 (4.48)
≥65	0.0 (0.00)	0.0 (0.00)			0.0 (0.00)	0.0 (0.00)
Black						
Total	21.6 (4.29)	37.9 (4.76)‡	20.1 (4.27)	39.9 (5.28)‡	21.2 (3.28)	38.6 (3.64)‡
Age group, y						
18-29	21.8 (6.25)	43.0 (7.39)†	19.1 (5.87)	47.2 (6.41)‡	21.0 (4.80)	44.5 (5.16)‡
30-44	21.0 (6.36)	36.7 (6.53)†	21.0 (6.35)	33.5 (9.13)	21.0 (4.76)	35.5 (5.50)†
45-64	24.4 (15.64)			21.0 (12.88)		18.4 (7.74)
≥65		61.6 (23.77)		0.0 (0.00)		61.6 (23.77)
Hispanic						
Total	24.1 (6.22)	44.8 (4.05)‡	22.6 (7.63)	19.3 (4.56)	23.7 (5.11)	37.1 (3.45)†
Age group, y						
18-29	29.8 (8.75)	53.7 (6.77)†	20.5 (8.65)	18.3 (4.94)	27.1 (6.74)	41.8 (4.84)†
30-44		26.0 (11.02)			15.2 (6.41)	24.3 (9.10)
45-64	70.4 (29.45)		0.0 (0.00)			26.6 (11.91)
≥65						

Abbreviations: *DSM-IV*, *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*; NESARC, National Epidemiologic Survey on Alcohol and Related Conditions; NLAES, National Longitudinal Alcohol Epidemiologic Survey.
*Ellipses indicate that estimate does not meet precision standard.
†$P < .05$, 1991-1992 compared with 2001-2002.
‡$P < .01$, 1991-1992 compared with 2001-2002.

explain the increases observed among minority young adults.

Historical and cultural factors that shape the life history of various racial/ethnic minorities in the United States are potentially equally important in understanding the observed changes. Within this context, future research will need to more fully address the extraordinary heterogeneity within racial/ethnic groups in the search for the explanations of why rates of marijuana use disorders increased among some minority young adults as opposed to white young adults. For example, rates of marijuana use disorders are likely to differ among Mexican Americans, Cuban Americans, and Puerto Rican Americans. It is clear that achieving an understanding of changes in the prevalence of marijuana use disorders among minority young adults will require further research and is an important public health priority.

The results of this study indicate that the vast majority of individuals who use marijuana or have marijuana use disorders are young. Despite this generalization, this study is the first to report significant increases in marijuana use among 45- to 64-year-old men and women combined as well as a modest but significant increase in marijuana abuse or dependence among 45- to 64-year-old men. This indicates that the upper age limit for marijuana use, abuse, and dependence has shifted in a meaningful way. Such a shift is consistent with increased lifetime exposure to marijuana availability in the group who were adolescents in the late 1960s or early 1970s and were ages 45 to 64 years in 2001-2002. Given this shift, the extent to which marijuana use may be a contributing cause of illness in the aging population deserves further research attention.

The major findings from this study have significant research and public health implications. With regard to research, more periodic epidemiologic observational studies are needed to rapidly detect emerging epidemics in marijuana use disorders (and other drug use disorders) as revealed in this study. The apparent epidemic of marijuana use disorders among young adult minorities has possibly been occurring for many years and the failure to detect it sooner lies in the lack of epidemiologic monitoring data. Concerning public health implications, it is important to communicate that the increased potency of marijuana over the past decade may, in part, be responsible for increases in abuse and dependence among users. This is critical information for parents, teachers, peers, physicians, and other health professionals. From a broader public health perspective, the results of this study highlight the need to strengthen existing prevention and intervention efforts and to develop and implement widely new programs with the sex, racial/ethnic, and age differentials observed in this study in mind. Specifically, programs targeting young adults, especially black and Hispanic young adults, need to be designed and tested for their effectiveness as quickly as possible.

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Study concept and design: Grant.
Acquisition of data: Grant, Stinson.
Analysis and interpretation of data: Compton, Grant, Colliver, Glantz, Stinson.
Drafting of the manuscript: Compton, Grant.
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If length of days be thy portion, make it not thy expectation. Reckon not upon a long life: think every day the last, and live always beyond thy account. He that so often surviveth his expectations lives many lives.
—Sir Thomas Browne (1605-1682)

FY 77

ALASKA STATE PLAN

FOR

DRUG ABUSE PREVENTION

Second Revision

CHART S-II-8

y Drug of Abuse of Clients Reporting Through the CODAP System

PRIMARY DRUG OF ABUSE	PERCENT OF TOTAL (# of clients)	
	FY 75	FY 76
Heroin	31% (150)	55% (141)
Illegal Methadone	0% (0)	0% (1)
Other Opiates and Synthetics	0% (0)	1% (3)
Alcohol Abuse	31% (153)	12% (31)
Barbiturates	3% (17)	2% (4)
Other Seditives or Hypnotics Tranquilizers	4% (18)	1% (2)
Amphetamines	10% (51)	7% (19)
Cocaine	2% (12)	3% (7)
Marijuana/Hashish	12% (57)	6% (15)
Hallucinogens	4% (21)	2% (5)
Inhalants	1% (4)	0% (0)
Over the Counter	1% (3)	0% (1)
Other	1% (5)	
None		11% (29)
TOTAL	100% (491)	100% (258)

population areas, and their treatment is geared to hard drug users. This data also reflects the rising occurrence of cocaine in Alaska. As indicated previously, caution should be used in interpreting this data; it reflects those persons in some type of treatment program, which might reflect supply of services and not the in-need population.

TABLE 2.8

PRIMARY DRUG OF ABUSE OF CLIENTS REPORTING THROUGH THE CODAP SYSTEM - FY 1975-1977

	FY 75		FY 76		To Date FY 77	
Number of clients reporting	524		365		199	
Heroin	150	(.29)	209	(.57)	109	(.59)
Alcohol	153	(.29)	38	(.10)	18	(.09)
Barbiturates	17	(.03)	8	(.02)	5	(.02)
Other Sedatives or Hypnotics, Tranquilizers	18	(.03)	3	(.01)		
Amphetamines	51	(.10)	27	(.07)	5	(.02)
Cocaine	12	(.02)	9	(.02)	23	(.12)
Marijuana/Hashish	57	(.11)	26	(.07)	18	(.09)
Hallucinogens	21	(.04)	5	(.01)	2	(.01)
Inhalants	4	(.01)				
Over the Counter	3	(.01)	1	(.01)		
Other	5	(.01)	1	(.01)		
None	33	(.06)	38	(.10)	19	(.10)

Table 2.9 summarizes the admissions and discharges across all drug agencies, and provides an indication of utilization by environment.

Of those persons discharged from the Alaska Psychiatric Institute with a primary diagnosis of "drug abuse", 23 (88.5%) were male and 3 (11.5%) were female. Seventy-three percent of drug-related discharges in Fiscal Year 1977 were Caucasian; Alaska Natives constituted 23% of the drug-related discharges, and all other minorities (including Black, Oriental and Hispanic persons) constituted 4% of drug-related discharges. These figures are roughly consistent with the proportions of these racial/ethnic groups in the general population of Alaska, i.e., Caucasian - 79%, Indian and Alaska Native - 17%, and other - 4%, with the exception that the Alaska Native group appears to be over-represented in the Alaska Psychiatric Institute's drug-related discharges.

Sex differences can be noted among the drug-related discharges. For Caucasians and Alaska Natives, males constituted a substantially greater number of "drug abuse" discharges than did females: 89.5% of Caucasian drug-related were male, and 100.0% of Alaska Native discharges that were drug-related were male. On the other hand, 100.0% of the Other Minority drug-related discharges were female.

These data are consistent with data from other therapeutic agencies, that is, CODAP treatment data, for calendar years 1977 and 1978, in two important respects:

(1) Males in general are over-represented in the client populations compared to their proportion of the general population; and

(2) Among female admissions, white women constitute, by far, the greatest proportions, but minority race women are over-represented compared to their proportion of the general population.

The Alaska Psychiatric Institute data are inconsistent with CODAP treatment data in that Blacks consituted 10% and 12% of total CODAP admissions in 1977 and 1978 respectively, while, at most, they constituted 4% of drug-related discharges from the Alaska Psychiatric Institute.

CODAP TREATMENT DATA

Among therepeutic agencies, e.g., state mental hospitals, private physicians, community mental health organizations and drug treatment programs, the latter, drug treatment programs, are the most important source of incidence data, since they usually provide the largest and most pertinent collections of data pertaining to drug(s) of abuse and the history of their use by clients.

The Client Oriented Data Acquisition Process (CODAP) is a data collection system developed by the National Institute on Drug Abuse for federally funded drug abuse treatment programs. The function of CODAP is to provide routine, e.g., monthly-quarterly-annual, current information about clients in treatment at these programs.

Currently, six programs in Alaska report to the CODAP system on a regular basis (and have so reported for approximately 4-5 years). According to CODAP reports, 131 persons were admitted to treatment in calendar year 1977, and 188 clients were admitted in calendar year 1978.

In 1977 and 1978, as in previous years, the majority of persons admitted to treatment indicated narcotics (heroin, and other opiates and synthetic opiates) as their primary drug problem. Admissions with a primary problem of narcotics accounted for 55.7% of total admissions in 1977. Narcotic drug admissions

during 1978 constituted 47.3% of total admissions. These figures represent a decrease from 1976 when 58.9%, or 163 (N=277), clients were admitted to treatment for narcotic drug problem. See Table 31.

Table 31. Admissions by Primary Drug of Abuse, All Programs, 1977-1978.

	1978		1977	
	N	% of Total	N	% of Total
None	15	7.98	3	2.29
Opiates/Synthetic Opiates	89	47.34	73	55.73
Alcohol	18	9.57	15	11.45
Barbiturates/Sedatives & Hypnotics	7	3.72	7	5.34
Amphetamines/Cocaine	24	12.77	12	9.16
Cannabis (Marijuana/Hashish)	19	10.11	12	9.16
Hallucinogens	7	3.72	1	0.76
Tranquilizers	4	2.13	1	0.76
Other (Unspecified)	1	0.53	2	1.53
Not Stated	4	2.13	5	3.82
TOTAL	188	100.0	131	100.0

Source: Therapeutic Agency Data Sources: 3.

Drug types which showed increases in the proportions of admissions during 1977 and 1978 were cocaine; barbiturates, and other sedatives and hypnotics; and marijuana/hashish. In 1976, cocaine was reported as the primary drug of abuse in 6.1% of admissions; this percentage rose to 9.6% in 1978. Marijuana as a primary drug of abuse risen from 8.3% of admissions in 1976 to 10.1% of admissions in 1978. The percentage of barbiturate and other sedatives/hypnotics admissions has doubled during this period: from 2.2% of admissions in 1976 to 5.3% in 1977 and 3.7% in 1978.

Alcohol admissions have remained fairly stable during the years 1976-1978, staying in the 9.5% - 11.5% range.

Females constituted 33.6% of all treatment admissions in 1977; and, 28.2% of all treatment admissions in 1978. See Table 32. It appears from the 1976-1978 data that the 2-to-1 male-female ratio of 1976-1977 is changing to roughly a 3-to-1 relationship at the current time. In contrast to the data on drug related mortality, females who were admitted to treatment in 1977-1978 were largely narcotics users: 73% of females admitted in 1977 reported narcotics as the

primary drug of abuse and 60%, in 1978. Although females did not comprise the largest numerical segment of problem users of any of the major drug types, i.e., narcotics, alcohol, amphetamines/cocaine and marijuana females did account for a majority of admissions for barbiturates, sedatives/hypnotics in 1978 and tranquilizers in 1977. The percentages of females admitted for a primary problem with these drugs (combined total) was 11.3% in 1978 and 9.1% in 1977.

Males were also most likely to be admitted for primary problems with narcotics (47% and 42% in 1977 and 1978, respectively), followed by cocaine, alcohol and cannabis.

In 1978, 78% of persons admitted to drug abuse treatment programs were Caucasian; 10% were Black; a total of approximately 11% belonged to the American Indian (2.1%) and Alaska Native (8.5%) sub-classes; and 1% were Hispanic, i.e., Spanish-surnamed. See Table 33. As in CODAP admission data for the period 1976-1977, the 1978 data show that Blacks were admitted to treatment in a proportion much larger than their corresponding proportion of the general population, which is approximately 3%; while Alaska Natives and American Indians are admitted in proportions somewhat smaller than their corresponding proportions of the general population, which are 9.3% and 5.4%, respectively. People of Oriental and other racial/ethnic background constituted approximately 1.3% of Alaska's general population. As there were no Oriental admissions to treatment, it may be inferred that Spanish-surnamed people were slightly over-represented in the treatment population.

Table 33. Client Admissions, by Race/Ethnicity, 1977-1978.

	1978		1977	
	N	%	N	%
White	147	78.2	93	71.0
Black	19	10.1	16	12.2
American Indian	4	2.1	2	1.5
Alaska Native	16	8.5	18	13.7
Hispanic	2	1.1	2	1.5
Total	188	100.0	131	100.0

Source: Therapeutic Agencies Data Sources: 3.

As depicted in Tables 34 and 35, in 1978, narcotics were the leading drug of abuse for clients of all races, with the exception of American Indians; and for all races in 1977, with the exception of Alaska Natives, who had the same number of admissions for primary problems with alcohol as for primary problems with narcotics. Narcotics are the leading drug of abuse for Black clients in particular, e.g., 69% in 1977 and 53% in 1978. As indicated by CODAP data, the second most important drug of abuse for Blacks is cocaine. After narcotics, Caucasian clients are most likely to be admitted for alcohol, cocaine and marijuana. The same pattern of use ap-

pears for the American Indian/Alaska Native subclass. All admissions of Spanish-surnamed individuals during 1977-1978 were for narcotics.

Table 34. Primary Drug of Abuse, by Race/Ethnicity, 1978.

	WHITE		BLACK		AMERICAN INDIAN		ALASKA NATIVE		HISPANIC		TOTAL
	N	%	N	%	N	%	N	%	N	%	N
None	13	8.8	1	5.3	1	25.0					15
Opiates	56	38.1	9	47.4			3	18.8	2	100.0	70
Other Opiates/ Synthetics	17	11.6	1	5.3			1	6.3			19
Alcohol	14	9.5	1	5.3	1	25.0	2	12.5			18
Barbituates	3	2.0									3
Other Sedatives/ Hypnotics	4	2.7									4
Amphetamines	5	3.4					1	6.3			6
Cocaine	9	6.3	7	36.8	1	25.0	1	6.3			18
Cannabis	16	10.9			1	25.0	2	12.5			19
Hallucinogens	5	3.4					2	12.5			7
Tranquilizers	4	2.7									4
Other							1	6.3			1
Not Stated	1	0.6					3	18.8			4
Total	147	100.0	19	100.0	4	100.0	16	100.0	2	100.0	188

Source: Therapeutic Agencies Data Sources: 3.

Table 35. Primary Drug of Abuse, by Race/Ethnicity, 1977.

	WHITE		BLACK		AMERICAN INDIAN		ALASKA NATIVE		HISPANIC		TOTAL
	N	%	N	%	N	%	N	%	N	%	N
None	3	3.2									3
Opiates	52	55.9	11	68.8	1	50.0	7	38.9	2	100.0	73
Other Opiates/ Synthetics											0
Alcohol	6	6.5	1	6.3	1	50.0	7	38.9			15
Barbituates	1	1.1									1
Other Sedatives/ Hypnotics	5	5.4	1	6.3							6
Amphetamines	1	1.1					1	5.6			2
Cocaine	6	6.5	2	12.5			2	11.1			10
Cannabis	11	11.8					1	5.6			12
Hallucinogens	1	1.1									1
Tranquilizers	1	1.1									1
Other	1	1.1	1	6.3							2
Not Stated	5	5.4									5
Total	93	100.0	16	100.0	2	100.0	18	100.0	2	100.0	131

Source: Therapeutic Data Sources: 3.

the basis of 1977-1978 data, youngsters fourteen years of age and under and who were admitted to drug abuse treatment programs were most likely to report a primary drug problem with marijuana or stimulants, i.e., amphetamines/cocaine. Those between the ages of fifteen and nineteen were most likely to be admitted for marijuana (44% and 52% in 1977 and 1978, respectively); the next most likely drug of abuse for this age group was the opiates/synthetic opiates class of drugs (31% and 13% in 1977 and 1978, respectively). During the period 1977-1978, persons twenty years and older were admitted for a primary problem of narcotics almost uniformly in every age group, with three exceptions. These three exceptions occurred in the older age groups, as follows:

(1) in the 40-49 year old age group, in 1978, alcohol admissions exceeded narcotics admissions;

(2) in the 35-39 year old age group, in 1977, alcohol admissions exceeded narcotics admissions; and

(3) in the 50-59 year old age group, in 1977, barbiturate/other sedatives and hypnotics admissions exceeded narcotics admissions. See Tables 36 and 37.

Table 36. Primary Drug of Abuse, by Age Group, Percent Distribution, 1978.

	AGE								
DRUG TYPE	0-14	15-19	20-24	25-29	30-34	35-39	40-49	50-59	60+
None		4.3	7.9	10.2	9.5			33.3	
Opiates/Synthetic Opiates		13.0	46.0	52.5	76.2	54.5	33.3	66.7	
Alcohol		4.3	9.5	10.2	9.5		50.0		
Barbiturates/Sedatives & Hypnotics		8.7	3.2	3.4			16.7		
Amphetamines/Cocaine			19.0	15.3		27.3			
Cannabis	100.0	52.2	6.3	1.7					100.0
Hallucinogens		8.7	4.8	1.7		9.1			
Tranquilizers		4.3	1.6	3.4					
Other						9.1			
Not Stated			1.6	1.7	4.8				
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Therapeutic Agencies Data Sources: 3.

Table 37. Primary Drug of Abuse, by Age Group, Percent Distribution, 1977.

	AGE								
DRUG TYPE	0-14	15-19	20-24	25-29	30-34	35-39	40-49	50-59	60+
None			2.2	4.1					
Opiates/Synthetic Opiates		31.3	54.3	63.3	80.0	25.0	100.0		
Alcohol		18.8	8.7	12.2		50.0			
Barbiturates/Sedatives & Hypnotics		6.3	4.3	6.1				100.0	
Amphetamines/Cocaine	100.0		19.6		10.0				
Cannabis		43.8	2.2	4.1	10.0	25.0			
Hallucinogens			2.2						
Tranquilizers				2.0					
Other			2.2	2.0					
Not Stated			4.3	6.1					
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0

Source: Therapeutic Data Sources: 3.

The largest proportion of admissions came from the 20-29 year old age group in 1977 and 1978; in 1977, 72.5% of all clients admitted, and in 1978, 64.9% of all clients admitted, were members of this age group. Twelve percent of admissions in both years were in the 15-19 year old age group. The third leading age category during the period 1977-1978 was the 30-34 year old age group, which accounted for 7.6% of admissions in 1977 and 11.2% of admissions in 1978. See Table 38.

Table 38. Admissions, by Age Group, Number and Percent Distribution, 1977-1978.

AGE	NUMBER	PERCENT	NUMBER	PERCENT
0-14	1	0.5	3	2.3
15-19	23	12.2	16	12.2
20-24	63	33.5	46	35.1
25-29	59	31.4	49	37.4
30-34	21	11.2	10	7.6
35-39	11	5.6	4	3.1
40-49	6	3.2	3	2.3
50-59	3	1.6	1	0.8
60+	1	0.5	0	-0-
TOTAL	188	100.0	131	100.0

Source: Therapeutic Agencies Data Sources: 3.

of-first-use analysis, i.e., that the incidence of heroin use is decreasing.

In the treatment population, heroin is the primary drug problem most frequently in the 25-34 year old age group and among white, black and hispanic admissions.

For the period 1968-1977, narcotics, as a single identifiable class, are not the major cause of death; however, when one includes in narcotics deaths the mixture-of-drugs deaths involving opiates and synthetic opiates, or opiates and other drugs, and alcohol-in-combination-with-drugs which are opiates/synthetic opiates, then narcotics become the second leading cause of death, following the alcohol-in-combination-with-drugs category. Deaths attributable to the single identifiable drug class, narcotics, are rising: in 1975, narcotics deaths constituted 8% of all drug-related deaths; this had risen to 15% in 1976 and to 12% in 1977. Narcotics have caused a more significant number of deaths among males than among females. During the period 1968-1977, 22% of all male deaths were narcotics-related; only 5% of female deaths showed narcotics as the cause of death. During the latest three years of death data, the ratio of male to female narcotics deaths has been 4 to 1.

Narcotics use, although apparently not spreading as rapidly as it once was, still continues to be a major drug problem in Alaska. Narcotics are responsible for the largest number of admissions to treatment related to a single drug type, and are responsible for a sizeable proportion of drug-related mortality.

LICIT DRUGS

In 1977 licit drugs (that is, prescription drugs and over-the-counter drugs) were a factor in approximately 82% of all drug-related deaths. In fact, in 1977, licit drugs, alcohol-in-combination-with-drugs, and narcotics (opiates/synthetic opiates) were the only drugs which caused drug deaths in Alaska.

Within the licit drug category, drugs-in-combination-with-alcohol was the leading cause of death. Sedative/hypnotic drugs, tranquilizers, analgesic/antipyretics (an over-the-counter drug type), and other analgesic drugs, were responsible for equal proportions of deaths, approximately 12% each.

Despite the large percentage of drug-related deaths resulting from licit drugs, admissions to treatment for these drugs were not substantial. In 1978, male admissions for licit drugs amounted to 6.7% of total male admissions. Licit drugs in the treatment context are barbiturates, other sedatives and hypnotics, amphetamines and tranquilizers. The largest share of these male licit drug admissions was for amphetamines.

In 1978, female admissions for licit drugs came to 15.2% of total female admissions. The four types of licit drugs mentioned above each accounted for the same percentage of admissions.

In 1977, admissions for licit drugs were 6.6% of all admissions for males and 11.4% of all admissions for females.

In 1978, the great majority of admissions for licit drugs occurred among persons 29 years old and younger; the same was true of 1977 admissions. Among CODAP admissions, the majority of licit drug abuse appears to occur among whites.

MARIJUANA

Marijuana continued as the leading drug involved in all arrests for drug violations,

although, in 1977, the proportion of all drug arrests which were for marijuana (69%) was smaller than in 1976 (76%). Most of these marijuana arrests involved young people under the age of 19 years (63%).

Marijuana seizures have increased markedly in the last four years, going from 446 pounds seized in 1977 (December 1974-November 1974), to 2,615 pounds seized in 1977 (December 1976-November 1977), indicating the increasing availability of marijuana in Alaska, both homegrown and imported. NOTE: In certain areas, Alaska's climate is suitable for outdoor marijuana cultivation.

Marijuana was the third leading drug problem in CODAP treatment program admissions in 1978. Marijuana admissions to treatment programs are increasing, and in 1978 accounted for 10 percent of admissions; fifty-two percent of these 1978 admissions were teenagers between the ages of 15 and 19 years of age. The health indicators available for this needs assessment give no evidence of adverse health consequences from marijuana use.

HALLUCINOGENS

Hallucinogens accounted for a little less than four percent of all CODAP treatment admissions in 1978, and less than one percent in 1977. Persons admitted for hallucinogen problems during 1977 and 1978 were male, and in the 15-24 year old age group, primarily. While PCP use has been reported (in the mass media and elsewhere) to be on the increase among young people in the state, this has not been documented by treatment statistics.

Arrests for hallucinogens were proportionately the same for males and females during the cumulative period, June 1973 through November 1977: 3.7% for males and 3.6% for females. When marijuana arrests are excluded, 13% of male arrests and 10% of female arrests involved hallucinogens; hallucinogens comprise the smallest drug arrest category, ranking behind narcotics, pharmaceuticals (included in sub-class "other non-narcotic drugs") and cocaine.

No deaths due to hallucinogens have been reported during the past ten-year period (provisional data).

INHALANTS

Inhalants were not mentioned by any persons entering drug abuse treatment programs as the primary drug of abuse in 1977 or 1978. During the ten-year period for which drug-related mortality data are available (provisional data), inhalant-caused deaths have been negligible. Casual reports suggest that inhalants are a problem among youth in the rural areas of the state, primarily due to the fact that obtaining more preferred substances is often difficult in remote areas. If this is so, the extent of the inhalant problem is not reflected in statistical data currently available.

Substance Abuse Treatment Admissions by Primary Substance of Abuse, According to Sex, Age Group, Race, and Ethnicity

YEAR=2000

[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	5,563	2,695	1,787	194	147	524	31	64	3	53	4	8	9
	[illegible]	100.0	48.4	32.1	3.5	2.6	9.4	0.6	1.2	0.1	1.0	0.1	0.1	0.2
[illegible]														
[illegible]	[illegible]	65.1	67.3	67.4	43.8	38.1	68.9	45.2	37.5	66.7	43.4	0.0	62.5	88.9
[illegible]	[illegible]	34.9	32.7	32.6	56.2	61.9	31.1	54.8	62.5	33.3	56.6	100.0	37.5	11.1
[illegible]	[illegible]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
[illegible] ADMISSION														
[illegible]	[illegible]	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.2
[illegible]	[illegible]	8.5	3.5	9.6	1.5	2.7	35.3	3.2	0.0	33.3	5.7	0.0	0.0	44.4
[illegible]	[illegible]	5.6	4.9	6.3	2.6	1.4	9.9	0.0	3.1	33.3	9.4	0.0	0.0	0.0
[illegible]	[illegible]	9.5	7.9	10.7	8.8	10.2	11.5	12.9	15.6	0.0	11.3	0.0	0.0	22.2
[illegible]	[illegible]	11.3	9.6	12.3	19.6	22.4	9.0	16.1	9.4	33.3	17.0	0.0	37.5	0.0
[illegible]	[illegible]	13.0	11.7	15.1	21.6	16.3	6.9	16.1	21.9	0.0	15.1	50.0	12.5	11.1
[illegible]	[illegible]	16.9	17.3	19.0	19.1	15.0	8.4	12.9	12.5	0.0	17.0	25.0	12.5	0.0
[illegible]	[illegible]	12.7	15.0	11.8	8.2	15.6	5.5	6.5	17.2	0.0	9.4	25.0	12.5	0.0

		7.5	10.2	5.6	5.7	6.8	2.1	9.7	6.3	0.0	5.7	0.0	0.0	0.0
		4.1	6.7	2.1	0.0	2.0	0.6	3.2	1.6	0.0	0.0	0.0	0.0	0.0
		1.5	2.6	0.6	0.5	0.7	0.2	3.2	0.0	0.0	1.9	0.0	0.0	0.0
		1.1	1.8	0.2	0.0	0.0	0.6	3.2	1.6	0.0	0.0	0.0	12.5	0.0
		0.7	1.4	0.1	0.0	0.0	0.2	0.0	1.6	0.0	0.0	0.0	0.0	0.0
		7.5	7.2	6.6	12.4	6.1	9.7	12.9	9.4	0.0	7.5	0.0	12.5	0.0
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		42.0	40.4	40.6	42.8	53.1	44.7	48.4	48.4	100.0	77.4	50.0	75.0	22.2
		3.7	1.5	3.2	24.7	14.3	5.7	3.2	3.1	0.0	1.9	0.0	12.5	11.1
		48.4	53.5	51.7	22.7	27.2	40.3	0.0	10.9	0.0	15.1	50.0	0.0	66.7
		0.7	0.5	0.5	1.5	0.7	1.1	3.2	3.1	0.0	1.9	0.0	0.0	0.0
		2.3	2.2	2.1	4.6	2.7	2.1	3.2	1.6	0.0	0.0	0.0	12.5	0.0
		3.0	1.9	2.0	3.6	2.0	6.1	41.9	32.8	0.0	3.8	0.0	0.0	0.0
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

		3.0	3.2	2.4	4.6	4.8	3.2	3.2	1.6	0.0	0.0	0.0	0.0	0.0
		93.8	93.8	94.7	93.3	91.2	90.3	96.8	95.3	100.0	98.1	100.0	100.0	100.0
		3.3	3.0	2.9	2.1	4.1	6.5	0.0	3.1	0.0	1.9	0.0	0.0	0.0
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Click here to view descriptions of drug categories

-- Quantity is zero

SOURCE: Office of Applied Studies, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Based on administrative data reported by States to TEDS through January 5, 2005.

Substance Abuse Treatment Admissions by Primary Substance of Abuse, According to Sex, Age Group, Race, and Ethnicity

YEAR=2001

		3,986	1,896	1,269	150	99	391	17	54	4	50	2	7	12
		100.0	47.6	31.8	3.8	2.5	9.8	0.4	1.4	0.1	1.3	0.1	0.2	0.3
		63.7	66.8	63.8	42.0	46.5	69.8	47.1	35.2	50.0	52.0	0.0	28.6	33.3
		36.3	33.2	36.2	58.0	53.5	30.2	52.9	64.8	50.0	48.0	100.0	71.4	66.7
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		7.6	2.6	6.5	0.0	0.0	40.2	0.0	0.0	25.0	8.0	0.0	0.0	0.0
		4.2	3.1	4.7	2.0	1.0	8.2	0.0	1.9	50.0	10.0	0.0	0.0	16.7
		10.4	8.1	12.3	10.7	8.1	14.1	11.8	14.8	0.0	22.0	0.0	0.0	0.0
		11.2	9.1	13.6	17.3	19.2	9.0	17.6	14.8	0.0	12.0	0.0	42.9	0.0
		12.8	12.3	14.1	24.7	19.2	5.6	17.6	9.3	0.0	14.0	0.0	28.6	0.0
		16.5	18.5	15.4	21.3	21.2	6.1	17.6	11.1	25.0	24.0	100.0	14.3	41.7
		11.9	14.3	10.7	11.3	9.1	4.6	11.8	25.9	0.0	2.0	0.0	0.0	25.0
		6.9	9.6	5.9	0.0	4.0	2.6	0.0	1.9	0.0	4.0	0.0	0.0	8.3

[redacted]	[redacted]	4.2	6.1	3.1	1.3	3.0	0.8	5.9	3.7	0.0	0.0	0.0	0.0	0.0
[redacted]	[redacted]	2.4	4.2	0.9	0.7	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[redacted]	[redacted]	1.3	2.1	0.6	0.7	2.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0
[redacted]	[redacted]	0.9	1.6	0.3	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0
[redacted]	[redacted]	9.9	8.6	11.8	10.0	11.1	8.7	17.6	13.0	0.0	4.0	0.0	14.3	8.3
[redacted]	[redacted]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
[redacted]	[redacted]	44.6	39.9	44.4	46.0	61.6	53.5	64.7	64.8	25.0	80.0	100.0	85.7	83.3
[redacted]	[redacted]	3.4	1.7	2.9	20.0	15.2	5.1	0.0	1.9	0.0	0.0	0.0	0.0	0.0
[redacted]	[redacted]	48.5	55.6	49.7	28.7	20.2	34.8	23.5	20.4	75.0	18.0	0.0	14.3	16.7
[redacted]	[redacted]	0.9	0.7	0.6	2.7	0.0	2.0	5.9	0.0	0.0	0.0	0.0	0.0	0.0
[redacted]	[redacted]	1.4	1.2	1.3	2.7	2.0	2.8	5.9	1.9	0.0	0.0	0.0	0.0	0.0
[redacted]	[redacted]	1.2	0.8	1.0	0.0	1.0	1.8	0.0	11.1	0.0	2.0	0.0	0.0	0.0
[redacted]	[redacted]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
[redacted]	[redacted]	3.2	2.3	3.2	5.3	6.1	4.9	29.4	3.7	0.0	4.0	0.0	0.0	0.0

[redacted]		93.0	94.1	93.5	93.3	90.9	87.0	64.7	94.4	100.0	92.0	100.0	85.7	100.0
[redacted]		3.9	3.6	3.4	1.3	3.0	8.2	5.9	1.9	0.0	4.0	0.0	14.3	0.0
[redacted]		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Click here to view descriptions of drug categories

– Quantity is zero

SOURCE: Office of Applied Studies, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Based on administrative data reported by States to TEDS through January 5, 2005.

Substance Abuse Treatment Admissions by Primary Substance of Abuse, According to Sex, Age Group, Race, and Ethnicity

YEAR=2003

		4,006	2,108	1,155	71	70	363	16	106	1	1	70	1	9
		100.0	52.6	28.8	1.8	1.7	9.1	0.4	2.6	0.0	0.0	1.7	0.0	0.2
		64.2	63.5	66.8	52.1	45.7	79.3	37.5	38.7	100.0	100.0	40.0	100.0	44.4
		35.8	36.5	33.2	47.9	54.3	20.7	62.5	61.3	0.0	0.0	60.0	0.0	55.6
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		10.5	3.7	11.5	0.0	1.4	53.7	0.0	2.8	0.0	0.0	10.0	0.0	0.0
		5.2	3.2	7.5	2.8	7.1	9.1	6.3	3.8	0.0	0.0	2.9	100.0	0.0
		8.7	6.2	10.4	16.9	14.3	10.5	12.5	19.8	0.0	100.0	15.7	0.0	0.0
		9.6	6.8	11.5	16.9	12.9	11.3	12.5	17.0	0.0	0.0	30.0	0.0	11.1
		11.2	10.3	13.0	21.1	21.4	3.6	18.8	16.0	100.0	0.0	21.4	0.0	11.1
		15.1	15.7	16.6	15.5	20.0	3.6	31.3	11.3	0.0	0.0	12.9	0.0	33.3
		15.2	19.1	13.3	11.3	8.6	3.3	0.0	17.9	0.0	0.0	2.9	0.0	22.2

11.5	16.0	7.9	9.9	10.0	1.9	6.3	4.7	0.0	0.0	1.4	0.0	11.1
6.6	8.2	6.7	4.2	2.9	1.7	6.3	1.9	0.0	0.0	2.9	0.0	0.0
4.1	6.8	1.3	1.4	1.4	0.6	0.0	0.9	0.0	0.0	0.0	0.0	0.0
1.1	1.9	0.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	11.1
1.0	1.7	0.1	0.0	0.0	0.3	6.3	1.9	0.0	0.0	0.0	0.0	0.0
0.2	0.2	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
45.2	40.7	44.8	42.3	62.9	56.7	81.3	55.7	0.0	100.0	75.7	0.0	44.4
2.3	1.0	2.4	21.1	14.3	3.3	0.0	0.9	100.0	0.0	2.9	0.0	0.0
49.2	56.5	49.9	28.2	18.6	34.2	0.0	19.8	0.0	0.0	15.7	100.0	55.6
0.8	0.4	1.1	2.8	0.0	1.9	0.0	0.0	0.0	0.0	2.9	0.0	0.0
1.5	1.1	1.3	4.2	4.3	3.0	0.0	1.9	0.0	0.0	1.4	0.0	0.0
1.1	0.2	0.4	1.4	0.0	0.8	18.8	21.7	0.0	0.0	1.4	0.0	0.0
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[illegible]	%	2.5	2.1	2.4	11.3	5.7	2.8	0.0	2.8	0.0	0.0	7.1	0.0	0.0
Not [illegible]	%	96.0	96.7	96.2	87.3	94.3	95.3	100.0	91.5	100.0	100.0	92.9	0.0	88.9
Unknown	%	1.4	1.2	1.4	1.4	0.0	1.9	0.0	5.7	0.0	0.0	0.0	100.0	11.1
Total	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Click here to view descriptions of drug categories

-- Quantity is zero

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Substance Abuse Treatment Admissions by Primary Substance of Abuse, According to Sex, Age Group, Race, and Ethnicity

YEAR=2003

		4,006	2,108	1,155	71	70	363	16	106	1	1	70	1	9
		100.0	52.6	28.8	1.8	1.7	9.1	0.4	2.6	0.0	0.0	1.7	0.0	0.2
		64.2	63.5	66.8	52.1	45.7	79.3	37.5	38.7	100.0	100.0	40.0	100.0	44.4
		35.8	36.5	33.2	47.9	54.3	20.7	62.5	61.3	0.0	0.0	60.0	0.0	55.6
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		10.5	3.7	11.5	0.0	1.4	53.7	0.0	2.8	0.0	0.0	10.0	0.0	0.0
		5.2	3.2	7.5	2.8	7.1	9.1	6.3	3.8	0.0	0.0	2.9	100.0	0.0
		8.7	6.2	10.4	16.9	14.3	10.5	12.5	19.8	0.0	100.0	15.7	0.0	0.0
		9.6	6.8	11.5	16.9	12.9	11.3	12.5	17.0	0.0	0.0	30.0	0.0	11.1
		11.2	10.3	13.0	21.1	21.4	3.6	18.8	16.0	100.0	0.0	21.4	0.0	11.1
		15.1	15.7	16.6	15.5	20.0	3.6	31.3	11.3	0.0	0.0	12.9	0.0	33.3
		15.2	19.1	13.3	11.3	8.6	3.3	0.0	17.9	0.0	0.0	2.9	0.0	22.2

11.5	16.0	7.9	9.9	10.0	1.9	6.3	4.7	0.0	0.0	1.4	0.0	11.1
6.6	8.2	6.7	4.2	2.9	1.7	6.3	1.9	0.0	0.0	2.9	0.0	0.0
4.1	6.8	1.3	1.4	1.4	0.6	0.0	0.9	0.0	0.0	0.0	0.0	0.0
1.1	1.9	0.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	11.1
1.0	1.7	0.1	0.0	0.0	0.3	6.3	1.9	0.0	0.0	0.0	0.0	0.0
0.2	0.2	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
45.2	40.7	44.8	42.3	62.5	56.7	81.3	55.7	0.0	100.0	75.7	0.0	44.4
2.3	1.0	2.4	21.1	14.3	3.3	0.0	0.9	100.0	0.0	2.9	0.0	0.0
49.2	56.5	49.9	28.2	18.6	34.2	0.0	19.8	0.0	0.0	15.7	100.0	55.6
0.8	0.4	1.1	2.8	0.0	1.9	0.0	0.0	0.0	0.0	2.9	0.0	0.0
1.5	1.1	1.3	4.2	4.3	3.0	0.0	1.9	0.0	0.0	1.4	0.0	0.0
1.1	0.2	0.4	1.4	0.0	0.8	18.8	21.7	0.0	0.0	1.4	0.0	0.0
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[redacted]		2.5	2.1	2.4	11.3	5.7	2.8	0.0	2.8	0.0	0.0	7.1	0.0	0.0
[redacted]		96.0	96.7	96.2	87.3	94.3	95.3	100.0	91.5	100.0	100.0	92.9	0.0	88.9
[redacted]		1.4	1.2	1.4	1.4	0.0	1.9	0.0	5.7	0.0	0.0	0.0	100.0	11.1
[redacted]		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Click here to view descriptions of drug categories

-- Quantity is zero

SOURCE: Office of Applied Studies, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS).

Based on administrative data reported by States to TEDS through January 5, 2005.

Drug-Taking Behavior Among School-Aged Youth

The Alaska Experience and Comparisons with Lower-48 States

Bernard Segal, PhD

figures the name of each substance has been abbreviated. The following is a list of the abbreviations to help interpret the data when the findings are presented graphically: MJ = Marijuana, CK = Cocaine, CR = Crack, ST = Stimulants, HL = Hallucinogens, DP = Depressants, HR = Heroin, IN = Inhalants, TQ = Tranquilizers, AL = Alcohol, and TB = Cigarettes.

A. PREVALENCE AND PATTERNS OF DRUG-TAKING BEHAVIOR

1. Opportunity to Try Drugs

Drugs cannot be experienced unless there is an opportunity to try them. Data addressing the opportunity to try drugs convey an indication of the availability of drugs, what trends in use may be present and, by extrapolation, information about the extent which those who have a chance to try a drug do so. Figure 4-1 describes how many adolescents in the sample indicated having had an opportunity to try any of the different chemical substances, except for alcohol and tobacco. Both weighted and unweighted results are provided in the table. The sample was weighted to adjust for differences in community representation.

A comparison of the actual (unweighted) and projected (weighted) findings shows that the differences between them tend to be small, suggesting that the actual sample is representative of the population sampled, except for sampling error. The following discussion is therefore based on the unweighted or actual sample results, as is the interpretation of other findings unless noted otherwise.

What can be observed from the data in Figure 4-1 is that opportunity to try different chemical substances is pervasive, but with some variations. Marijuana is the drug most in evidence (70.1 percent), followed by inhalants (44.9 percent). Just less than two-fifths (39.3 percent) of the sample reported an opportunity to try cocaine. Stimulants are next, with 36.4 percent of the sample having indicated an opportunity to try them. Reports on the opportunity to try the remaining substances are less extensive, but over a quarter of the sample had an opportunity to try hallucinogens (23.1 percent), and

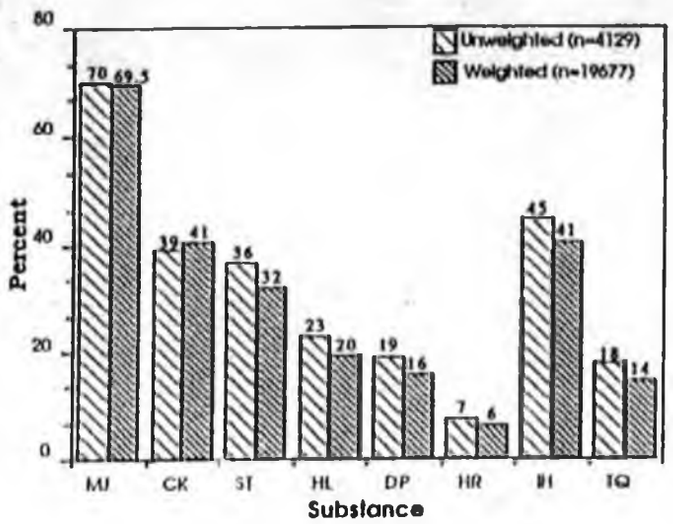

FIGURE 4-1. Opportunity to Try Chemical Substances Weighted and U weighted Comparison, Total Sample, 1988 (Figures are rounded to near whole.)

less than a fifth indicated a chance to try depressants (18.6 percen or tranquilizers (17.6 percent). Last among the opportunity to t was heroin, with 7.4 percent of the sample noting an opportunity try it.

2. Opportunity to Try and Trying a Drug

An important piece of information related to the opportunity try a drug is the number of students who did try a substance wh the chance arose. Table 4-1 reports the percent of students wh indicated that they tried a substance when they had an opportunit As noted from the data, except for crack and heroin, over half th students tried one of the substances when an opportunity occurre Consistent with its level of apparent availability, three-quarte (75.9 percent) of those who had an opportunity to try marijuana d so. Stimulants are the next highest tried substance, with two-thir (66 percent) of the sample showing that they tried it when a chan arose. Over half of those who had a chance to try cocaine (52 pe

Alaska Natives Combating Substance Abuse and Related Violence Through Self-Healing

Prepared For

The Alaska Federation of Natives

by

The Center for Alcohol and Addiction Studies

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January 1999

physical or biological factors then the cure must also be of the spirit. (p. 1)

Alcoholism and Co-Existing (Co-Morbid) Disorders

Although the high level of drinking and alcohol-related problems among Alaska Natives has been well documented (see above), almost no research has been undertaken that described causal factors, clinical features, and behavioral correlates of alcohol dependence among members of this ethnic group. In order to learn more about how alcohol affects Alaska Natives, Segal and Hesselbrock (1997a) have been collecting data from clients entering three inpatient alcoholism treatment facilities in Anchorage. The information gained from this on-going study helps to further an understanding of some of the causes and of the course and consequences of alcohol dependence among Alaska Natives.

As of the fall of, 1997, a total of 261 Alaska Native clients were studied, of whom 54% were male, and 46% female. Their average age was 33.1 years (SD=8.5), ranging between 18 to 58 years. The mean age for males was 33.0 years (SD=8.4), and 33.2 (SD=8.6) for females; the age differences were not statistically significant.

The ethnic distribution was as follows: Aleut 23%, Yup'ik Eskimo, 19%, Tlingit Indian, 11%, Inupiat Eskimo, 17%, Athabascan Indian, 26%, Haida, 2%, Tsimshian, 1%, and mixed heritage, 1%. The relationship between gender and ethnicity was not statistically significant.

One of the most important findings, in addition to the severity of their drinking problems, was that a large proportion of men and women also presented other forms of drug dependence, as well as co-morbid or coexisting disorders. Forty-four percent of the cases, for example, were also dependent on cocaine, while 63% were also dependent on marijuana. Significantly more men (60%) than women (40%) exhibited marijuana dependence, while significantly more women (54%) than men (46%) manifested cocaine dependence.

Drug and Alcohol Services Information System

The DASIS Report

October 15, 2004

Adolescent Treatment Admissions: 1992 and 2002

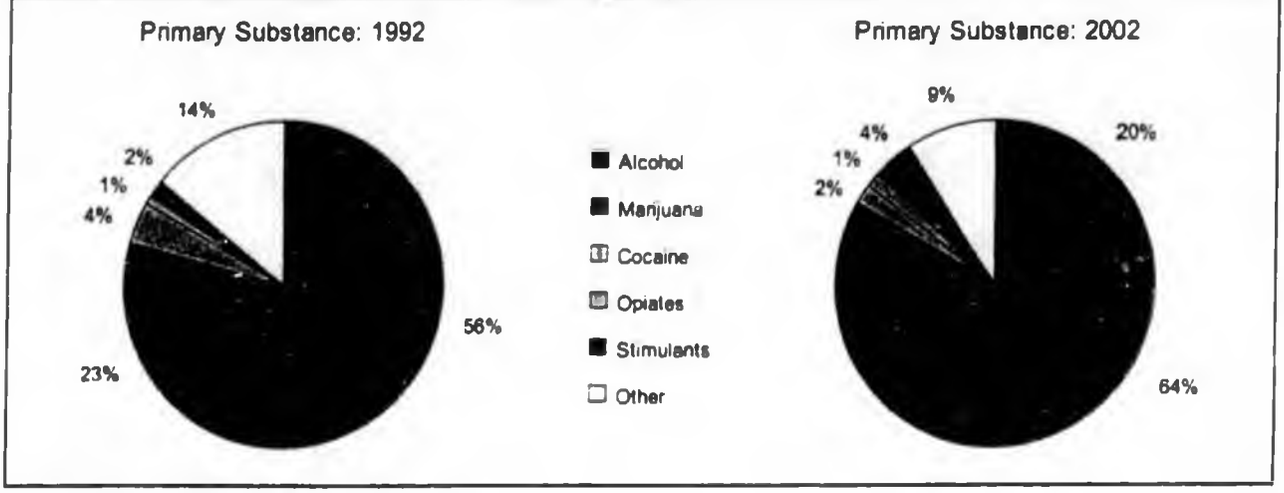
In Brief

- Between 1992 and 2002, the number of adolescent treatment admissions increased 65 percent, while all admissions increased 23 percent
- Between 1992 and 2002, adolescent admissions reporting marijuana as the primary substance increased from 23 to 64 percent, while admissions reporting alcohol as the primary substance decreased from 56 to 20 percent of all adolescent admissions
- In 2002, more than half (54 percent) of adolescent admissions were referred to treatment through the criminal justice system compared with 40 percent in 1992

This report looks at adolescent treatment admissions (aged 12 to 17) reported to the Treatment Episode Data Set (TEDS) in 1992 and 2002. TEDS is an annual compilation of data on the demographic characteristics and substance abuse problems of those admitted for substance abuse treatment. Between 1992 and 2002, the number of adolescent treatment admissions increased 65 percent (from 95,000 admissions in 1992 to 156,000 in 2002) and accounted for 8 percent of all admissions to TEDS in 2002, while all admissions increased 23 percent. TEDS data indicate that the overall increase in adolescent admissions for substance abuse treatment was attributable mainly to the increase in admissions where marijuana was reported as the primary substance of abuse.[1]

The DASIS Report is published periodically by the Office of Applied Studies, Substance Abuse and Mental Health Services Administration (**SAMHSA**). For questions about this report please e-mail: shortreports@samhsa.hhs.gov.

Figure 1. Primary Substance of Abuse among Adolescent Treatment Admissions: 1992 and 2002



Source: 2002 SAMHSA Treatment Episode Data Set (TEDS)

Primary Substance

During the 10-year time period from 1992 to 2002, alcohol and marijuana were the two most frequently reported primary substances of abuse among adolescents. However, their relative proportions reversed over time. In 1992, 56 percent of adolescent admissions reported alcohol as their primary substance of abuse, and 23 percent reported marijuana (Figure 1). By 2002, the proportion of adolescents reporting alcohol as their primary substance of abuse had decreased to 20 percent while that reporting primary marijuana had increased to 64 percent. This increase of 41 percent was mainly due to an influx of adolescent admissions referred by the criminal justice system who reported marijuana as the primary substance.[2] In 1992, about 8,500 (or 9 percent) of all adolescent treatment admissions were referred by the criminal justice system and reported marijuana as their primary substance. By 2002, that number had increased to 52,700, representing about 34 percent of all adolescent admissions.

Demographic Characteristics

The proportion of adolescent admissions that were female decreased from 34 percent in 1992 to 30 percent in 2002. However, among all admissions, the proportion of females increased from 28 to 30 percent.

The racial/ethnic characteristics of adolescent admissions changed somewhat between 1992 and 2002 (Figure 2). Adolescent admissions in 1992 were about 68 percent White, 16 percent Black, and 11 percent Hispanic. By 2002, the percentage of adolescent admissions who were White had decreased to 60 percent, while the percentage of adolescent admissions who were Black and Hispanic had increased (Blacks 19 percent, Hispanics 15 percent).

Referral Source

In 2002, more than half (54 percent) of adolescent admissions were referred to treatment through the criminal justice system compared with 40 percent in 1992 (Figure 3).[3] The percentage of school referrals decreased from 18 percent in 1992 to 11 percent in 2002 and self/individual referrals remained stable around 18 percent for this 10-year period.

Type of Criminal Justice Referral

About one-third (16) of States and jurisdictions reporting to TEDS collected data on the type of criminal justice referral in both 1992 and 2002.[4] Among adolescent admissions referred by the criminal justice system, probation/parole referrals were the most common type of criminal justice system referral in both 1992 (48 percent) and 2002 (65 percent) (Figure 4). State/Federal court was the second largest type of criminal justice referral source among adolescent admissions (32 percent in 1992 and 18 percent in 2002).

Figure 2. Race/Ethnicity of Adolescent Treatment Admissions: 19[illegible] and 2002

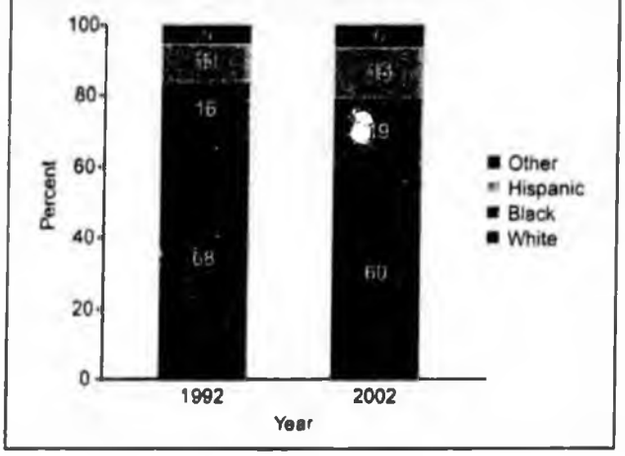
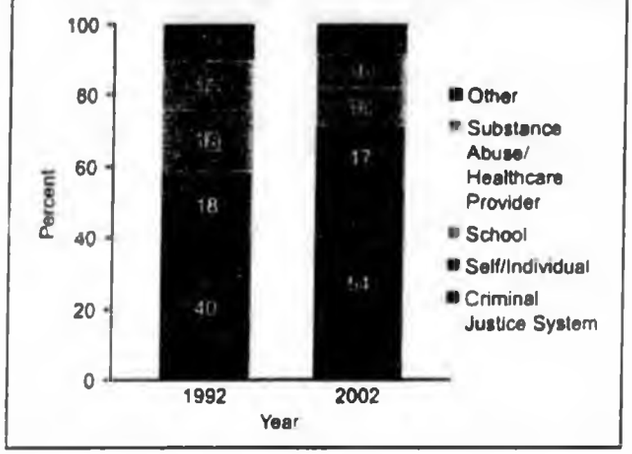


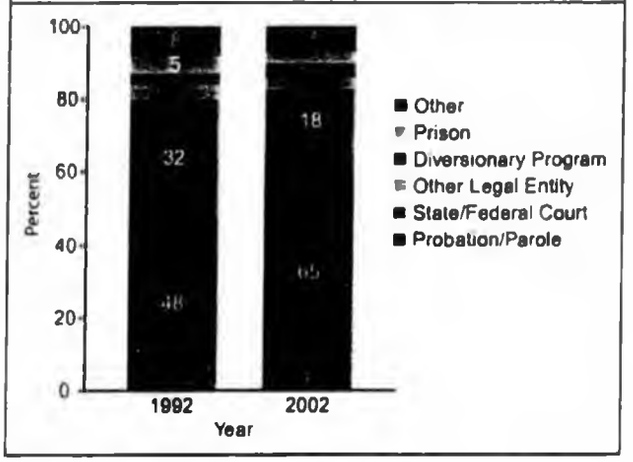
Figure 3. Referral Source for Adolescent Treatment Admissions: 1992 and 2002



Services

Among adolescent admissions, the percentage of admissions receiving ambulatory services[3] increased from 78 percent in 1992 to 83 percent in 2002. Admissions receiving rehabilitation/residential services decreased from 19 to 15 percent during this same time period. The percentage of admissions for detoxification services remained relatively constant at around 2 to 3 percent of total adolescent admissions.

Figure 4. Criminal Justice Referrals for Adolescents, by Type: 1992 and 2002



End Notes

[1] The primary substance of abuse is the main substance reported at the time of admission.

[2] For a more detailed report on treatment referral among adolescent marijuana users, see Substance Abuse and Mental Health Services Administration, Office of Applied Studies. *The DASIS report: Treatment referral sources for adolescent marijuana users.* Rockville, MD: March 29, 2002.

[3] For more detail regarding referrals by the criminal justice system, see Substance Abuse and Mental Health Services Administration, Office of Applied Studies. *The DASIS report: Substance abuse treatment admissions referred by the criminal justice system: 2002.* Rockville, MD: July 30, 2004.

[4] *Detailed criminal justice referral* is a Supplemental Data Set item reported with a 75 percent or higher response rate in 1992 and 2002 by 16 States including: CO, HI, KS, MA, MD, ND, NJ, NM, NV, NY, OH, OR, PA, RI, TX, and WV.

[5] Service settings are of three types: ambulatory, residential/rehabilitative, and detoxification. Ambulatory settings include intensive outpatient, non-intensive outpatient, and ambulatory detoxification. Residential/rehabilitative settings include hospital (other than detoxification), short-term (30 days or fewer), and long-term (more than 30 days). Detoxification includes 24-hour hospital inpatient and 24-hour free-standing residential.

The Drug and Alcohol Services Information System (DASIS) is an integrated data system maintained by the Office of Applied Studies, Substance Abuse and Mental Health Services Administration (SAMHSA). One component of DASIS is the Treatment Episode Data Set (TEDS). TEDS is a compilation of data on the demographic characteristics and substance abuse problems of those admitted for substance abuse treatment. The information comes primarily from facilities that receive some public funding. Information on treatment admissions is routinely collected by State administrative systems and then submitted to SAMHSA in a standard format. TEDS records represent admissions rather than individuals, as a person may be admitted to treatment more than once. State admission data are reported to TEDS by the Single State Agencies (SSAs) for substance abuse treatment. There are significant differences among State data collection systems. Sources of State variation include completeness of reporting, facilities reporting TEDS data, clients included, and treatment resources available. See the annual TEDS reports for details. Approximately 1.9 million records are included in TEDS each year.

The DASIS Report is prepared by the Office of Applied Studies, SAMHSA, Synectics for Management Decisions, Inc., Arlington, Virginia, and by RTI International in Research Triangle Park, North Carolina (RTI International is a trade name of Research Triangle Institute).

Information and data for this issue are based on data reported to TEDS through March 1, 2004.

Access the latest TEDS reports at: http://www.oas.samhsa.gov/dasis.htm
Access the latest TEDS public use files at: http://www.oas.samhsa.gov/SAMHDA.htm
Other substance abuse reports are available at: http://www.oas.samhsa.gov

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Substance Abuse and Mental Health Services Administration
Office of Applied Studies
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National Survey on Drug Use and Health

The NSDUH Report

September 24, 2004

Risk and Protective Factors for Substance Use among American Indian or Alaska Native Youths

In Brief

- American Indian or Alaska Native youths were more likely to perceive moderate to no risk of substance use
- A larger percentage of American Indian or Alaska Native youths did not perceive strong parental disapproval of youth substance use than youths in other racial/ethnic groups
- American Indian or Alaska Native youths were more likely to believe that all or most of the students in their school get drunk at least once a week

Recent reports have shown higher rates of substance use among American Indians or Alaska Natives compared with persons from other racial/ethnic groups. Among American Indian or Alaska Native youths aged 12 to 17, the rates of past month cigarette use, binge drinking, and illicit drug use were higher than those from other racial/ethnic groups.[1,2] The National Survey on Drug Use and Health (NSDUH) collects data on a variety of risk and protective factors found to be associated with youth substance use. Risk factors for substance use typically are associated with an increased likelihood of substance use (e.g., drug availability), whereas protective factors are associated with a decreased likelihood of substance use (e.g., perceived parental disapproval of alcohol or drug use). Research has shown similar associations with risk and protective factors and substance use among American Indian or Alaska Native youths compared with youths in other racial/ethnic groups.[3,4]

The NSDUH Report (formerly **The NHSDA Report**) is published periodically by the Office of Applied Studies, Substance Abuse and Mental Health Services Administration (**SAMHSA**).

Table 1. Percentages of Youths Aged 12 to 17 Reporting Individual and Peer Risk and Protective Factors, by Race/Ethnicity: 2002 and 2003 Annual Averages

Factor	American Indian or Alaska Native	Other Racial/ Ethnic Groups
Risk[a]		
Perceived Moderate to No Risk if		
Smoke 1 or More Packs of Cigarettes Per Day	46.7[b]	36.3
Smoke Marijuana Once or Twice a Week	57.5[b]	46.9
Have 4 or 5 Alcoholic Drinks Once or Twice a Week	67.8[a]	61.6
Peers Do Not Disapprove if		
Smoke 1 or More Packs of Cigarettes Per Day	20.0	15.0
Smoke Marijuana Once or Twice a Week	22.3	19.7
Have 1 or 2 Alcoholic Drinks Nearly Every Day	21.2	17.2
Protective[a]		
Participation in Youth Activities		
2 or more	73.8[b]	85.7
Religiosity		
Attended Religious Services 25 or More Times in the Past Year	18.4[b]	33.0
Religious Beliefs Are a Very Important Part of Life	71.8[a]	77.5
Religious Beliefs Influence How Youths Make Decisions	64.0	68.7
Important for Friends to Share Religious Beliefs	38.9	35.2

Table 2. Percentages of Youths Aged 12 to 17 Reporting Family Risk and Protective Factors, by Race/Ethnicity: 2002 and 2003 Annual Averages

Factor	American Indian or Alaska Native	Other Racial/ Ethnic Groups
Risk[a]		
Parents Do Not Strongly Disapprove if		
Smoke 1 or More Packs of Cigarettes Per Day	17.9[b]	10.3
Try Marijuana Once or Twice	15.7[a]	10.7
Have 1 or 2 Alcoholic Drinks Nearly Every Day	15.2[a]	11.2
Parental Monitoring		
Parents Seldom/Never Provided Help With Homework	22.6	18.8
Parents Seldom/Never Limited Amount of Time Out with Friends on School Nights	33.8	29.3
Parents Seldom/Never Made Youth Do Chores Around House	11.9	12.6
Parents Seldom/Never Limited Amount of Time Watching Television	64.6	62.8
Protective[a]		
Parent-Child Communication		
Talked to at Least 1 Parent about Dangers of Substance Use	54.6	58.5
Parental Encouragement		
Parents Let Youth Know They Had Done a Good Job	84.1	85.8
Parents Told Youth They Were Proud of Something They Had Done	84.5	85.3

This report looks at risk and protective factors for substance use among 46,310 respondents aged 12 to 17 (representing a national population of 25 million) comparing American Indian or Alaska Native youths with youths among all other racial/ethnic groups combined. The focus is on American Indian or Alaska Native youths and their higher levels of risk factors or lower levels of protective factors compared with youths of other races. Three categories of risk and protective factors were examined: individual/peers, family, and school. All estimates are annual averages based on combined 2002 and 2003 NSDUH data.

Individual and Peer Risk and Protective Factors

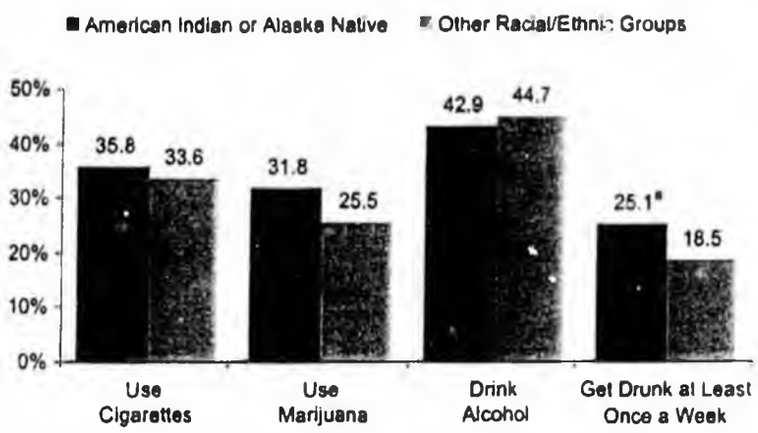
Individual and peer risk factors studied included low perceived risk in using substances and peer approval of substance use. A larger percentage of American Indian or Alaska Native youths perceived moderate to no risk of substance use compared with youths in other racial/ethnic groups (Table 1).[3] For example, 47 percent of American Indian or Alaska Native youths believed there was moderate to no risk in smoking one or more packs of cigarettes per day compared with only 36 percent of youths in other racial/ethnic groups. Although a larger percentage of American Indian or Alaska Native youths perceived their peers did not disapprove of smoking one or more packs of cigarettes a day, smoking marijuana once or twice a week, or having one or two alcoholic drinks nearly every day compared with youths in other racial/ethnic groups, the differences were not statistically significant.

Individual and peer protective factors studied were participation in youth activities and the importance of religious beliefs.[3] American Indian or Alaska Native youths were less likely to have participated in two or more youth activities than youths in other racial/ethnic groups. A smaller percentage of American Indian or Alaska Native youths attended religious services on a regular basis than youths in other racial/ethnic groups. Fewer American Indian or Alaska Native youths also agreed that religious beliefs are a very important part of their lives compared with youths in other racial/ethnic groups.

Family Risk and Protective Factors

A larger percentage of American Indian or Alaska Native youths did not perceive strong parental disapproval of youth substance use compared with youths in other racial/ethnic groups (Table 2).[3] For example, 18 percent of

Figure 1. Percentages of Youths Aged 12 to 17 Reporting Substance Use by All or Most of the Students In Their School,[5] by Race/Ethnicity: 2002 and 2003 Annual Averages



American Indian or Alaska Native youths felt their parents would not strongly disapprove if they were to smoke one or more packs of cigarettes per day compared with 10 percent of youths in other racial/ethnic groups. American Indian or Alaska Native youths were about as likely to have spoken with at least one of their parents about the dangers of substance use (55 percent) as youths from other racial/ethnic groups (59 percent).[5]

School Risk Factors

An important risk factor for youths is poor school performance. A similar proportion of American Indian or Alaska Native youths (9 percent) and youths in other racial/ethnic groups (6 percent) reported a D or lower average for the past semester or grading period.

Another risk factor for youths is the belief that the majority of their peers are using cigarettes, alcohol, or illicit drugs. American Indian or Alaska Native youths were equally as likely as youths in other racial/ethnic groups to report that most or all of the students in their school grade use cigarettes, use marijuana, or drink alcohol (Figure 1).[5] However, a greater percentage of American Indian or Alaska Native youths (25 percent) believed that all or most of the students in their school grade get drunk at least once a week than youths in other racial/ethnic groups (19 percent).

End Notes

1. Office of Applied Studies, Substance Abuse and Mental Health Services Administration (2003, May 16). Substance use among American Indians or Alaska Natives. *The NSDUH Report*. [Available at http://www.oas.samhsa.gov/facts.cfm]
2. Office of Applied Studies. (2004). *Results from the 2003 National Survey on Drug Use and Health: National findings* (DHHS Publication No. SMA 04-3964, NSDUH Series H-25). Rockville, MD: Substance Abuse and Mental Health Services Administration.
3. Moncher, M. S., Holden, G. W., & Trimble, J. E. (1990). Substance abuse among Native American youth. In G. A. Marlatt & G. R. VandenBos (Eds.), *Addictive behaviors: Readings on etiology, prevention, and treatment* (pp. 841-856). Washington, DC: American Psychological Association.
4. Lane, J., Gerstein, D., Huang, L., & Wright, D. (2001). *Risk and protective factors for adolescent drug use: Findings from the 1997 National Household Survey on Drug Abuse* (DHHS Publication No. SMA 01-3499, Analytic Series A-12). Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies. [Available at http://www.oas.samhsa.gov/analytic.htm]
5. Specific questions regarding youth risk and protective behaviors can be found in: Office of Applied Studies, Substance Abuse and Mental Health Services Administration. (2003, March). *2003 National Survey on Drug Use and Health: CAI specs for programming, English version* [PDF, March 2003], pgs. 154 and 234-240. Retrieved August 26, 2004, from http://www.oas.samhsa.gov/nhsda/methods.cfm#2k2

Figure and Table Notes

* Difference between American Indian or Alaska Native estimate and Other Racial/Ethnic Groups estimate is statistically significant at the 0.05 level.

\+ Difference between American Indian or Alaska Native estimate and Other Racial/Ethnic Groups estimate is statistically significant at the 0.01 level.

Source: SAMHSA, 2002 and 2003 NSDUH.

The National Survey on Drug Use and Health (NSDUH) is an annual survey sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA). Prior to 2002, this survey was called the National Household Survey on Drug Abuse (NHSDA). The 2002 and 2003 data are based on information obtained from 135,910 persons aged 12 or older, including 665 American Indian or Alaska Native youths aged 12 to 17. The survey collects data by administering questionnaires to a representative sample of the population through face-to-face interviews at their place of residence.

The NSDUH Report is prepared by the Office of Applied Studies (OAS), SAMHSA, and by RTI International in Research Triangle Park, North Carolina. (RTI International is a trade name of Research Triangle Institute.)

Information and data for this report are based on the following publications and statistics:

Office of Applied Studies. (2003). *Results from the 2002 National Survey on Drug Use and Health: National findings* (DHHS Publication No. SMA 03-3836, NSDUH Series H-22). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Office of Applied Studies. (2004). *Results from the 2003 National Survey on Drug Use and Health: National findings* (DHHS Publication No. SMA 04-3964, NSDUH Series H-25). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Also available online: http://www.oas.samhsa.gov

Because of improvements and modifications to the 2002 NSDUH, estimates from the 2002 and 2003 surveys should not be compared with estimates from the 2001 or earlier versions of the survey to examine changes over time.

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Table 3.1b (continued)
Admissions by sex, race/ethnicity, and age at admission, according to primary substance of abuse: TEDS 2002
Percent distribution

[Based on administrative data reported to TEDS by all reporting States and jurisdictions. See Table 4.2.]

Sex, race/ethnicity, and age at admission	No. of admissions	Primary substance at admission: Alcohol: Alcohol only	Alcohol: With secondary drug	Opiates: Heroin	Opiates: Other opiates	Cocaine: Smoked cocaine	Cocaine: Other route	Marijuana/hashish	Stimulants: Methamphetamine/amphetamine	Stimulants: Other stimulants	Tranquilizers	Sedatives	Hallucinogens	PCP	Inhalants	Other/none specified	Total
Age at admission																	
Under 15 years	30,467	5.7	10.0	0.3	0.3	0.4	0.5	55.4	2.0	0.1	0.2	0.1	0.3	*	0.7	23.8	100.0
15 to 19 years	205,202	9.0	15.9	3.8	0.9	1.5	1.8	54.8	5.6	0.1	0.3	0.2	0.5	0.2	0.2	5.4	100.0
15 to 17 years	128,930	6.8	14.4	1.1	0.5	0.8	1.3	63.4	4.2	0.1	0.3	0.2	0.5	0.1	0.2	6.3	100.0
18 to 19 years	76,272	12.8	18.5	8.3	1.7	2.6	2.6	40.1	8.0	0.1	0.4	0.2	0.5	0.3	0.1	3.9	100.0
20 to 24 years	242,486	15.5	18.5	14.7	2.7	4.4	3.3	25.6	10.2	0.1	0.4	0.2	0.3	0.4	0.1	3.7	100.0
25 to 29 years	211,963	18.1	18.5	17.2	3.1	8.1	4.1	15.2	10.6	0.1	0.4	0.2	0.2	0.4	*	3.7	100.0
30 to 34 years	258,007	19.5	20.8	17.2	2.8	13.2	4.6	8.6	9.0	0.1	0.4	0.2	0.1	0.2	*	3.3	100.0
35 to 39 years	303,074	23.4	22.5	16.5	2.3	14.8	4.5	5.5	6.6	0.1	0.4	0.2	*	0.2	*	2.9	100.0
40 to 44 years	280,746	28.7	22.1	16.8	2.5	13.3	3.9	4.0	4.9	0.1	0.4	0.3	0.1	0.1	*	2.8	100.0
45 to 49 years	185,365	35.4	19.4	19.2	2.8	10.1	2.9	3.1	3.2	0.1	0.5	0.3	*	0.1	*	2.9	100.0
50 to 54 years	92,147	42.8	16.8	19.8	2.7	7.4	2.2	2.4	1.9	*	0.5	0.3	*	*	*	3.1	100.0
55 to 59 years	39,152	55.3	13.3	14.8	2.1	5.2	1.8	1.7	1.4	*	0.5	0.2	*	*	*	3.6	100.0
60 to 64 years	16,340	66.3	9.3	10.8	1.8	4.0	1.2	1.1	0.6	*	0.7	0.2	*	*	*	3.9	100.0
65 years and over	11,054	72.0	7.9	7.4	2.0	2.2	0.7	1.1	0.7	0.1	1.0	0.4	*	*	*	4.4	100.0

* Less than 0.05 percent.

SOURCE: Office of Applied Studies, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS) - 3.01.04

Table 5.1a
Admissions aged 12-17 by primary substance of abuse: TEDS 1992-2002
Number

[Based on administrative data reported to TEDS by all reporting States and jurisdictions. See Table 4.2.]

Primary substance	*Number*										
	1992	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*
Total	95,017	95,271	109,123	122,910	129,859	131,194	139,129	137,783	138,660	146,012	156,367
Alcohol	53,416	46,915	43,065	37,996	37,538	35,747	36,566	35,450	33,386	32,847	31,921
Alcohol only	26,379	21,275	17,926	14,096	12,768	11,537	11,489	11,115	10,519	10,814	10,407
Alcohol w/secondary drug	27,037	25,640	25,139	23,900	24,770	24,210	25,077	24,335	22,867	22,033	21,514
Cocaine	3,852	3,041	3,500	3,196	3,286	3,106	3,632	3,171	2,636	2,622	2,925
Smoked cocaine	1,861	1,600	2,026	1,623	1,469	1,296	1,627	1,369	1,121	1,044	1,119
Non-smoked cocaine	1,991	1,441	1,474	1,573	1,817	1,810	2,005	1,802	1,515	1,578	1,806
Opiates	834	874	1,161	1,273	1,440	1,995	2,141	2,115	1,992	2,060	2,222
Heroin	724	754	944	1,119	1,259	1,830	1,967	1,873	1,607	1,462	1,515
Other opiates/synthetics	110	120	217	154	181	165	174	242	385	598	707
Non-RX methadone	25	19	20	39	42	24	23	36	38	38	45
Other opiates/synthetics	85	101	197	115	139	141	151	206	347	560	662
Marijuana/hashish	21,899	30,742	46,572	63,403	72,601	74,639	81,650	82,797	85,888	91,022	98,499

Continued. See notes at end of table.

Table 5.1a (continued)
Admissions aged 12-17 by primary substance of abuse: TEDS 1992-2002
Number

[Based on administrative data reported to TEDS by all reporting States and jurisdictions. See Table 4.2.]

Primary substance	*Number*										
	1992	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*
Stimulants	1,390	1,907	3,166	4,983	3,106	4,622	4,400	3,468	4,328	5,351	6,182
Methamphetamine	743	1,159	2,078	3,472	2,160	3,402	3,298	2,543	3,152	3,956	4,745
Other amphetamines	440	560	923	1,330	679	1,045	917	787	980	1,149	1,250
Other stimulants	207	188	165	181	267	175	185	138	196	246	187
Other drugs	4,484	3,986	3,933	4,069	3,427	3,167	3,709	4,696	4,578	4,722	3,360
Tranquilizers	81	75	79	97	93	131	148	225	274	418	413
Benzodiazepine	43	45	45	60	54	66	64	131	155	255	253
Other tranquilizers	38	30	34	37	39	65	84	94	119	163	160
Sedatives/hypnotics	110	92	80	96	95	115	116	120	167	220	268
Barbiturates	38	36	42	44	25	39	32	28	47	53	56
Other sedatives/hypnotics	72	56	38	52	70	76	84	92	120	167	212
Hallucinogens	1,645	1,208	1,116	1,430	1,269	1,059	892	1,107	1,015	880	684
PCP	247	255	301	299	235	179	133	180	169	161	192
Inhalants	1,812	1,734	1,566	1,298	983	895	745	615	534	475	456
Over-the-counter	104	94	153	127	95	101	86	89	88	174	173
Other	485	528	638	722	657	687	1,589	2,360	2,331	2,394	1,174
None reported	9,142	7,806	7,726	7,990	8,461	7,918	7,031	6,086	5,852	7,388	11,258

SOURCE: Office of Applied Studies, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS) - 3.01.04

Table 5.1b
Admissions aged 12-17 by primary substance of abuse: TEDS 1992-2002
Percent distribution

[Based on administrative data reported to TEDS by all reporting States and jurisdictions. See Table 4.2.]

Primary substance	*Percent distribution*										
	1992	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Alcohol	56.2	49.2	39.5	30.9	28.9	27.2	26.3	25.7	24.1	22.5	20.4
Alcohol only	27.8	22.3	16.4	11.5	9.8	8.8	8.3	8.1	7.6	7.4	6.7
Alcohol w/secondary drug	28.5	26.9	23.0	19.4	19.1	18.5	18.0	17.7	16.5	15.1	13.8
Cocaine	4.1	3.2	3.2	2.6	2.5	2.4	2.6	2.3	1.9	1.8	1.9
S ed cocaine	2.0	1.7	1.9	1.3	1.1	1.0	1.2	1.0	0.8	0.7	0.7
Non-smoked cocaine	2.1	1.5	1.4	1.3	1.4	1.4	1.4	1.3	1.1	1.1	1.2
Opiates	0.9	0.9	1.1	1.0	1.1	1.5	1.5	1.5	1.4	1.4	1.4
Heroin	0.8	0.8	0.9	0.9	1.0	1.4	1.4	1.4	1.2	1.0	1.0
Other opiates/synthetics	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.5
Non-RX methadone	•	•	•	•	•	•	•	•	•	•	•
Other opiates/synthetics	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.4	0.4
Marijuana/hashish	23.0	32.3	42.7	51.6	55.9	56.9	58.7	60.1	61.9	62.3	63.0

Continued. See notes at end of table.

Table 5.1b (continued)
Admissions aged 12-17 by primary substance of abuse: TEDS 1992-2002
Percent distribution

[Based on administrative data reported to TEDS by all reporting States and jurisdictions. See Table 4.2.]

Primary substance	Percent distribution										
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Stimulants	1.5	2.0	2.9	4.1	2.4	3.5	3.2	2.5	3.1	3.7	4.0
Methamphetamine	0.8	1.2	1.9	2.8	1.7	2.6	2.4	1.8	2.3	2.7	3.0
Other amphetamines	0.5	0.6	0.8	1.1	0.5	0.8	0.7	0.6	0.7	0.8	0.8
Other stimulants	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1
Other drugs	4.7	4.2	3.6	3.3	2.6	2.4	2.7	3.4	3.3	3.2	2.1
Tranquilizers	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
Benzodiazepine	*	*	*	*	*	0.1	*	0.1	0.1	0.2	0.2
Other tranquilizers	*	*	*	*	*	*	0.1	0.1	0.1	0.1	0.1
Sedatives/hypnotics	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Barbiturates	*	*	*	*	*	*	*	*	*	*	*
Other sedatives/hypnotics	0.1	0.1	*	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Hallucinogens	1.7	1.3	1.0	1.2	1.0	0.8	0.6	0.8	0.7	0.6	0.4
PCP	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Inhalants	1.9	1.8	1.4	1.1	0.8	0.7	0.5	0.4	0.4	0.3	0.3
Over-the-counter	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other	0.5	0.6	0.6	0.6	0.5	0.5	1.1	1.7	1.7	1.6	0.8
None reported	9.6	8.2	7.1	6.5	6.5	6.0	5.1	4.4	4.2	5.1	7.2

* Less than 0.05 percent.

SOURCE: Office of Applied Studies, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS) - 3.01.04.

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ALASKA STATE PLAN

FOR

DRUG ABUSE PREVENTION

Second Revision

Table 3.1b

Admissions by sex, race/ethnicity, and age at admission, according to primary substance of abuse: TEDS 2002

Percent distribution

[Based on administrative data reported to TEDS by all reporting States and jurisdictions. See Table 4.2.]

Sex, race/ethnicity, and age at admission	No. of admissions	Primary substance at admission: Alcohol		Opiates		Cocaine		Marijuana/hashish	Stimulants		Tranquilizers	Sedatives	Hallucinogens	PCP	Inhalants	Other/none specified	Total
		Alcohol only	With secondary drug	Heroin	Other opiates	Smoked cocaine	Other route		Methamphetamine/amphetamine	Other stimulants							
Total	1,882,584	23.6	19.3	15.2	2.4	9.3	3.5	15.1	6.6	0.1	0.4	0.2	0.1	0.2	0.1	3.8	100.0
Sex																	
Male	1,315,587	25.8	20.4	14.9	1.9	7.9	3.4	16.3	5.3	0.1	0.3	0.2	0.2	0.2	0.1	3.4	100.0
Female	565,354	18.6	16.8	15.9	3.7	12.8	3.8	12.3	9.8	0.1	0.7	0.4	0.1	0.2	0.1	4.6	100.0
Race/ethnicity																	
White (non-Hispanic)	1,097,962	28.5	19.5	12.3	3.6	5.3	2.8	14.2	8.4	0.1	0.6	0.3	0	0.1	0.1	3.9	100.0
Black (non-Hispanic)	446,946	12.4	21.2	15.3	0.5	22.5	4.8	17.7	0.7	0.1	0.1	0.1	0.1	0.4	*	4.1	100.0
Hispanic origin	236,652	20.8	15.3	29.5	0.7	5.0	4.5	14.2	7.6	0.1	0.3	0.1	0.1	0.4	0.1	1.3	100.0
Mexican	97,407	28.6	12.1	18.8	0.5	4.0	3.8	15.9	14.5	0.1	0.2	0.1	0.1	0.5	0.2	0.6	100.0
Puerto Rican	81,782	9.3	18.8	48.8	0.7	4.8	4.5	10.7	0.6	*	0.4	0.2	0.1	0.2	*	1.0	100.0
Cuban	5,470	25.0	15.0	13.9	1.0	11.7	10.4	16.9	2.1	*	0.3	0.2	0.3	0.5	0.1	2.5	100.0
Other/not specified	51,993	24.1	15.8	20.9	0.8	6.5	5.1	16.2	6.5	0.2	0.2	0.1	0.1	0.5	0.1	2.8	100.0
Other	83,635	28.3	19.7	10.9	1.6	4.9	2.4	15.6	12.9	0.1	0.2	0.2	0.2	0.3	0.1	2.7	100.0
Alaska Native	5,139	40.4	22.7	17.9	2.8	3.0	1.7	7.6	2.7	0.1	0.2	0.1	0.1	0.2	*	0.6	100.0
American Indian	34,324	37.8	25.1	4.8	1.4	3.1	1.8	13.6	8.6	0.1	0.2	0.1	0.1	0.1	0.2	2.9	100.0
Asian/Pacific Islander	16,552	19.0	13.6	8.3	1.8	7.2	2.1	20.0	25.1	0.1	0.2	0.2	0.3	0.1	*	1.9	100.0
Other	27,620	19.9	16.0	18.6	1.4	6.2	3.5	16.9	12.7	0.1	0.3	0.2	0.2	0.5	*	3.5	100.0

Continued. See notes at end of table.

Alaska Natives Combating Substance Abuse and Related Violence Through Self-Healing

Prepared For
The Alaska Federation of Natives

by

The Center for Alcohol and Addiction Studies
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physical or biological factors then the cure must also be of the spirit. (p. 1)

Alcoholism and Co-Existing (Co-Morbid) Disorders

Although the high level of drinking and alcohol-related problems among Alaska Natives has been well documented (see above), almost no research has been undertaken that described causal factors, clinical features, and behavioral correlates of alcohol dependence among members of this ethnic group. In order to learn more about how alcohol affects Alaska Natives, Segal and Hesselbrock (1997a) have been collecting data from clients entering three inpatient alcoholism treatment facilities in Anchorage. The information gained from this on-going study helps to further an understanding of some of the causes and of the course and consequences of alcohol dependence among Alaska Natives.

As of the fall of, 1997, a total of 261 Alaska Native clients were studied, of whom 54% were male, and 46% female. Their average age was 33.1 years (SD=8.5), ranging between 18 to 58 years. The mean age for males was 33.0 years (SD=8.4), and 33.2 (SD=8.6) for females; the age differences were not statistically significant.

The ethnic distribution was as follows: Aleut 23%, Yup'ik Eskimo, 19%, Tlingit Indian, 11%, Inupiat Eskimo, 17%, Athabascan Indian, 26%, Haida, 2%, Tsimshian, 1%, and mixed heritage, 1%. The relationship between gender and ethnicity was not statistically significant.

One of the most important findings, in addition to the severity of their drinking problems, was that a large proportion of men and women also presented other forms of drug dependence, as well as co-morbid or coexisting disorders. Forty-four percent of the cases, for example, were also dependent on cocaine, while 63% were also dependent on marijuana. Significantly more men (60%) than women (40%) exhibited marijuana dependence, while significantly more women (54%) than men (46%) manifested cocaine dependence.

Initiation of Marijuana Use: Trends, Patterns, and Implications

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Highlights

Estimates of first-time drug use, referred to as incidence or initiation, provide an important measure of the Nation's drug use problem. They suggest emerging patterns of use and identify periods of heightened risk for an immediate focus on the prevention of substance use, particularly among children and youths. Incidence data also suggest the future burden on substance abuse treatment systems. This report contains an analysis of the initiation of marijuana use. Marijuana is the most widely used illicit drug in the United States and is, in most cases, the first illicit drug used by persons who have used an illicit drug. The analysis is based on data from the 1999 and 2000 National Household Surveys on Drug Abuse (NHSDAs). Selected findings are given below:

- An estimated 2.0 million Americans aged 12 or older used marijuana for the first time in 1999. This was fewer than the estimated number of new users in 1998 (approximately 2.5 million Americans), but still above the 1989 and 1990 levels (1.4 million each year).

- The rate of marijuana initiation increased during the late 1960s and early 1970s, with a peak in 1976 and 1977 (21.0 per 1,000 potential new users). After that period, the rate of new marijuana use decreased to 8.5 in 1990, followed by an increase to 16.8 in 1996, then a decrease to 13.6 in 1999.

- The trend in marijuana incidence since 1965 followed the same general pattern for males and females, although rates for females were consistently below rates for males. In 1999, the rates of new use per 1,000 potential new users were 15.5 for males and 12.1 for females.

- The rates of first marijuana use among American Indians/Alaska Natives were higher than for other racial/ethnic groups during the 1990s. Unlike the overall trend in rates, which showed a peak in 1996, the trend for American Indians/Alaska Natives indicated a continuing increase, reaching 46.5 per 1,000 potential new users in 1999.

- The mean age at first marijuana use was 19 years in the early 1970s and decreased to 17 years in the 1990s. The trends for males and females were parallel, with males initiating at an earlier age than females, on average. The average age of new marijuana users in 1999 was 16.4 years for males and 17.6 years for females.

- These average annual incidence rates varied slightly across different States and age groups. Colorado, Delaware, Massachusetts, New Hampshire, and Vermont were ranked in the top 10 for the overall age group (ages 12 or older), the youth age group (ages 12 to 17), and the young adult age group (ages 18 to 25). New Mexico had the highest rate

for the overall and youth age groups. Minnesota had the highest rate for the overall and young adult age groups. By comparison, Louisiana had the lowest rate of recent new users for the overall, youth, and young adult age groups. Texas and Utah had the lowest rates of recent initiation among youths and young adults.

- Among recent initiates of marijuana (first use in 1998 or 1999), nearly three quarters had first used between the ages of 13 and 18. More than a quarter initiated use at age 14 or younger.

- Approximately 60 percent of recent initiates had used both alcohol and cigarettes prior to their first use of marijuana. About 9 percent had never used alcohol or cigarettes at the time of first marijuana use, and the remaining recent initiates had used either alcohol only (16.6 percent) or cigarettes only (14.8 percent).

- The average number of marijuana initiates per day during 1998 and 1999 was highest in June and July. For females, the months with the highest rates of initiation were January and July. On average during 1998 and 1999, there were 3,197 male initiates and 2,989 female initiates per day. Among males, the number of daily initiates increased to approximately 4,300 in June and July. Among females, the estimated initiates per day rose to 3,625 in July and 3,519 in January.

- Prior use of alcohol or cigarettes was highly correlated with becoming a new marijuana user. Among persons aged 12 to 25 who had never used marijuana, those who had smoked cigarettes were an estimated 6 times more likely than nonsmokers to initiate marijuana use within 1 year. Alcohol users were an estimated 7 to 9 times more likely than nonusers to start using marijuana within a year. Daily cigarette smoking was associated with a twofold increase in risk for marijuana initiation.

- Initiation of marijuana use before age 15 was associated with a greater risk of other drug use behaviors at age 26 or older. These behaviors include heroin use, cocaine use, nonmedical psychotherapeutic use, daily or almost daily marijuana use, and weekly use of illicit drugs other than marijuana.

- Initiation of marijuana use before age 15 was associated with a greater risk of illicit drug dependence or abuse at age 26 or older. Relative to adults who had initiated marijuana use at age 21 or older, adults who had first used before age 15 were 6 times as likely to be dependent on an illicit drug.

1. Introduction

1.1 Purpose of the Report

Estimates of first-time drug use, referred to as incidence or initiation, provide an important measure of the Nation's drug use problem. They suggest emerging patterns of use and identify periods of heightened risk for an immediate focus on the prevention of substance use, particularly among children and youths. Incidence data also suggest the future burden on substance abuse treatment systems.

This report contains an analysis of the initiation of marijuana use. Marijuana is the most widely used illicit drug in the United States and is in most cases the first illicit drug used by persons who have used an illicit drug. The analysis is based on data from the 1999 and 2000 National Household Surveys on Drug Abuse (NHSDAs). Overall estimates of the prevalence and rate of marijuana initiation based on combined 1999 and 2000 data were released in September 2001 (Office of Applied Studies [OAS], 2001b). Those results showed that, although there was a decrease in incidence from 2.6 million new users in 1996 to 2.0 million in 1999, these levels were still significantly higher than the levels in 1990 (1.4 million). The purpose of this report is to present more in-depth analyses of incidence rates among population subgroups, demographic characteristics and predictors of recent initiates, and consequences of early marijuana initiation. Specifically, this report has four objectives:

- estimate incidence rates and trends of marijuana use,
- provide State-specific incidence estimates,
- identify characteristics and predictors of recent marijuana initiates, and
- examine the relationship between early marijuana use and later drug use patterns.

The report is organized into seven chapters and two appendices. Chapter 2 describes the data source, measures of key study variables, and statistical methods. Chapter 3 presents incidence rates and trends of marijuana use based on the combined 1999 and 2000 computer-assisted interviewing (CAI) data. Chapter 4 summarizes incidence rates by State using small area estimation (SAE) methods. Chapter 5 examines social and demographic characteristics of recent marijuana initiates and predictors of initiation. This chapter also examines the relationship of marijuana initiation with school status, employment, and marital status among those aged 18 to 25 years. Chapter 6 addresses the relationship between early marijuana use and later drug use patterns, including lifetime and past year use of heroin, cocaine,

and psychotherapeutics nonmedically; heavy marijuana use; heavy illicit drug use other than marijuana; abuse of and/or dependence on alcohol or other drugs; marijuana dependence; illicit drug dependence other than marijuana; illicit drug dependence; and alcohol dependence. Chapter 6 also reports findings on the relationship between the age at onset of marijuana use and past year drug dependence among lifetime marijuana users aged 26 or older who also used marijuana in the past year. Chapter 7 provides a summary of overall findings and conclusions and discusses some implications. Appendix A discusses the statistical methods used and the limitations of the NHSDA data, describes the statistical methods for calculating incidence rates and potential biases associated with incidence estimates, and discusses the change in NHSDA measures of substance use initiation and its impact on incidence rate calculation. Appendix B presents selected standard error tables for population estimates in the report. Appendix C provides selected questionnaire pages from the 1999 and 2000 NHSDAs on the demographic and marijuana questions.

1.2 Background on Marijuana Use and Initiation of Marijuana Use

1.2.1 Recent Trends in Use

Marijuana is the most widely used illicit drug in the United States (OAS, 2001b). According to the 2000 NHSDA, an estimated 14.0 million Americans were current (past month) marijuana users (OAS, 2001b). This represents 6.3 percent of people aged 12 or older and 76 percent of current illicit drug users. Of all current illicit drug users, approximately 59 percent used only marijuana, 17 percent used marijuana and another illicit drug, and the remaining 24 percent used only an illicit drug other than marijuana in the past month (OAS, 2001b).

The NHSDA and the Monitoring the Future (MTF) have shown generally similar long-term trends in the prevalence of substance use among youths, regardless of substantial differences in methodology between the two primary surveys of youth substance use. Between 1999 and 2000, both the NHSDA and MTF found no significant changes in lifetime, past year, and current use of marijuana (Johnston, O'Malley, & Bachman, 2001; OAS, 2001b).

The MTF found that marijuana use rose particularly sharply among 8th graders in the 1990s, with annual prevalence tripling between 1991 and 1996 (i.e., from 6 to 18 percent) (Johnston et al., 2001). Starting a year later, marijuana use also rose significantly among 10th and 12th graders. Following the recent peak in 1996-1997, annual marijuana use declined somewhat in recent years (Johnston et al., 2001).

1.2.2 Prior Studies of Marijuana Initiation

Although the prevalence of marijuana use has been studied widely, relatively few incidence (first use) data are available. In the first published analysis of national incidence trends, Gfroerer and Brodsky (1992) estimated the number of new users of marijuana and other drugs based on combined data of 1985 to 1991 NHSDAs. They found that fewer than half a million people per year began using marijuana before 1966 and that new use of marijuana began increasing after 1966, reaching a peak in 1973 and declining thereafter. Johnson, Gerstein, Ghadialy, Choi, and Gfroerer (1996) studied the incidence of alcohol, cigarettes, and illicit drugs using data from the 1991 to 1993 NHSDAs. Their investigation found declining trends of marijuana initiation at all ages since at least the late 1970s. However, the mean age of marijuana initiates declined throughout most of the measurement period, from older than 19 years in the mid-1960s to younger than 18 years in the late 1980s and early 1990s. In addition, the rates of marijuana initiation at ages 12 to 17 (youths) and 18 to 25 (young adults) in the early 1990s were still much higher than corresponding rates in the early 1960s.

In recent years, youths aged 12 to 17 have constituted about two thirds of the new marijuana users, with young adults aged 18 to 25 constituting most of the remaining third (OAS, 2001b). Additionally, recent rates of new use among youths in 1996-1998 (averaging 86.4 initiates per 1,000 potential new users) were higher than they had ever been. Nonetheless, rates of new use for both youths and young adults decreased between 1998 and 1999. The average age of marijuana initiation has generally declined since 1965 and remained around 17 years after 1992 (OAS, 2001b).

1.2.3 Research on Seasonality of Substance Use

There are no known prior studies of seasonal patterns in the initiation of substance use. A few studies, however, have looked at seasonal patterns in use. Zingraff and Belyea (1983) suggested a possibility of increased rates of marijuana use during the summer months; other researchers have suggested that variations in activities during the different seasons may influence substance use (McKee, Sanderson, Chenet, Vassin, & Skolnikov, 1998). Kovalenko et al. (2000) studied the seasonality in symptoms of mental and substance use disorders among youths aged 9 to 17 and found a weak seasonality in the counts of symptoms of marijuana use, with estimated zeniths in August and September. The investigators suggested that the possible seasonality in marijuana use may be related to the cycles in school attendance.

On the other hand, one analysis found a lower prevalence of current marijuana during July to September. Using data from 1992-1996 NHSDAs, Huang, Schildhaus, and Wright (1999) examined the seasonality of past month substance use on a quarterly basis. In their logistic regression model controlling for survey year, age, gender, race/ethnicity, and region, current use

of the following substances among youths aged 12 to 17 was observed to show seasonal differences: alcohol, an illicit drug except marijuana, marijuana only, an illicit drug, and heavy drinking. Youths were 1.3 times more likely to engage in current marijuana use only in Quarter 4 (October-December) than in Quarter 3 (July-September). Relative to Quarter 3, youths also were 1.2 times more likely to use an illicit drug in Quarter 1 (January-March). Further analyses found that, during Quarter 3, youths were significantly less likely to report being approached by drug dealers in the past month than in the other quarters.

1.2.4 Predictors of Initiation

Little research exists on the predictors of marijuana initiation. Van Etten and Anthony (1999) examined the initial opportunity to try marijuana and the transition from first opportunity to first marijuana use using data from the 1979 to 1994 NHSDAs. They found that an estimated 51 percent of U.S. residents had an opportunity to try marijuana. One striking finding is that 43 percent of those with an opportunity went on to first use marijuana within 1 year of the first opportunity (i.e., making a rapid transition). The study also found that males were more likely than females to have an opportunity to use marijuana, but were not more likely to eventually use marijuana once an opportunity was presented. Research has also shown that the risk of initiating marijuana use is associated with age and birth cohort. Chen and Kandel (1995) found that the major risk period for initiation into marijuana was mostly over by age 20. Gfroerer and Epstein (1999) also found that marijuana initiation was unlikely to occur after age 21. Rates of first marijuana use were higher among younger people and cohorts born after World War II than older people and cohorts born before World War II (Johnson et al., 1996; Johnson & Gerstein, 1998).

The onset of marijuana use also is influenced by a variety of personal, family, and community risk and protective factors, such as affiliation with drug-using peers, personality dimensions (e.g., unconventionality), and the parent-child bond (Brook et al., 1999a; Clayton, 1992).

1.2.5 Sequencing of Substance Use Initiation

Marijuana has been hypothesized to be a gateway drug for other illicit drug use. Studies by Kandel and other investigators have identified a developmental sequence of drug involvement among youths (Ellickson, Hays, & Bell, 1992; Kandel, Yamaguchi, & Chen, 1992; Yamaguchi & Kandel, 1984). Specifically, the initial use of alcohol and/or cigarettes typically precedes the use of marijuana, which then is followed by the involvement of other illicit drugs. By studying a sample of rural youths, Donnermeyer (1993) also found that early use of alcohol predicted early use of marijuana, which in turn was predictive of early use of other illicit drugs. Studies of age at initiation of drug use confirmed that initiation of alcohol or tobacco typically occurred before

marijuana initiation (Costello, Erkanli, Federman, & Angold, 1999; Kosterman, Hawkins, Guo, Catalano, & Abbott, 2000).

1.2.6 Early Marijuana Use and Later Substance Use Problems

Not only does early marijuana use signal an increased risk for hard drug use by grade 10 (Ellickson & Morton, 1999), but it also is associated with drug use problems, dependency, and treatment need (Brook, Richter, Whiteman, & Cohen, 1999b; Clark, Kirisci, & Tarter, 1998; Gfroerer & Epstein, 1999). Among individuals with a history of marijuana dependence, the age at onset of marijuana dependence was younger in the adolescent-onset individuals compared with the adult-onset individuals, and the time from the first use to the onset of dependence also was shorter in the adolescent-onset individuals (Clark et al., 1998). Among middle school students, use of marijuana and other drugs before the age of 12 was found to be associated with engaging in greater numbers of health risk behaviors than among students whose age at onset was 12 years or older or the never users (DuRant, Smith, Kreiter, & Krowchuk, 1999). Early marijuana use is associated with later adolescent problems that limit the acquisition of skills necessary for employment and increased risk of contracting the human immunodeficiency virus (HIV) and using illicit drugs (Brook et al., 1999b). Gfroerer and Epstein (1999) used NHSDA data to examine the impact of marijuana initiation on future drug abuse treatment need and found age at first use of marijuana as the most significant predictor of treatment need in all four age groups (i.e., 12 to 17, 18 to 25, 26 to 34, and 35 or older).

The number of new marijuana users may have a significant impact on the future demand for substance abuse treatment as some new users continue into heavier marijuana use or other illicit drug taking. Consequently, delaying the onset of marijuana initiation could be important in preventing the progression into heavy drug involvement and other drug-related health risk behaviors, as well as in decreasing the social burdens of illicit drug use.

Taken together, studies of marijuana initiation provide vital information for focused prevention programs about the periods of heightened initiation risk, specify subgroups vulnerable to initial use, and generate estimates on treatment needs and future demand for substance abuse treatment.

6. Early Marijuana Use and Later Drug Use Patterns

6.1 Introduction

In addition to providing useful information for prevention planning, incidence data can be used to help policymakers anticipate future trends in the nature and extent of the need for substance abuse treatment services. Marijuana incidence data have been used to make projections of drug abuse treatment need in the year 2020 (Gfroerer & Epstein, 1999). That study and others have shown the importance of early marijuana use as a predictor of later substance use patterns and associated problems (Brook, Gordon, Brook, & Cohen, 1989; Brook, Cohen, & Brook, 1998b; Brook et al., 1999b; DeWit, Hance, Offord, & Ogborne, 2000; Grant & Dawson, 1998). Given the substantial increases in marijuana incidence rates during the 1990s and the continuing high rates as recently as 1999, data showing the relationship between early initiation and later substance use patterns are needed. This chapter provides such data, primarily focusing on age at first use of marijuana as a predictor.

The remainder of this chapter focuses on three topics. Section 6.2 discusses the estimated proportions of drug use patterns among adults aged 26 or older by age at first marijuana use and by age groups. Section 6.3 provides adjusted odds ratios (ORs) of illicit drug use, heavy illicit drug use, and substance dependence/abuse from the multiple logistic regression models. Each logistic regression model includes age of marijuana initiation, age group, gender, race/ethnicity, and educational level. Section 6.4 includes findings for a subset of the analysis focusing on past year marijuana users aged 26 or older. This subset examined the relationship between age at first marijuana use and past year drug dependence (e.g., marijuana dependence, illicit drug dependence other than marijuana, illicit drug dependence, alcohol dependence or abuse, and alcohol or illicit drug dependence/abuse).

Heavy marijuana use was defined as using marijuana on at least 300 days in the past year. Heavy illicit drug use other than marijuana was defined as using at least one of the following: cocaine (including crack), heroin, hallucinogens (including LSD and PCP), inhalants, or any prescription-type psychotherapeutic used nonmedically on at least 50 days in the past year, regardless of marijuana/hashish use. Marijuana/hashish users who also had used any of the other listed drugs on at least 50 days in the past year were counted as heavy users of illicit drugs other than marijuana. Because of changes in the measures of dependence and abuse in the 2000 survey, estimates for alcohol or illicit drug abuse and dependence were based only on data from the 2000 survey. In brief, the 2000 NHSDA includes a series of questions on dependence that assess health or emotional problems, attempts to cut down on use, tolerance, withdrawal, and other symptoms associated with substances used. The questions on abuse assess problems at work, home, and school; problems with family or friends; physical danger; and trouble with the

law due to substances used. The changes in measures of abuse and dependence limit the comparisons between 2000's estimates and estimates from prior surveys.

6.2 Estimated Prevalence of Illicit Drug Use, Heavy Illicit Drug Use, Substance Abuse, and Dependence, by Age of Marijuana Initiation

6.2.1 Use of Heroin, Cocaine, and Psychotherapeutics Nonmedically

The prevalence of lifetime and past year use of heroin, cocaine, and nonmedical psychotherapeutics in relation to age at first marijuana use is presented in Table 6.1 and Figure 6.1. Among adults aged 26 or older, the highest prevalence of use of heroin, cocaine, and psychotherapeutics in the lifetime was noted among those who initiated marijuana before they were 15 years old (9.2, 62.0, and 53.9 percent, respectively, for heroin, cocaine, and psychotherapeutics). There was a tendency for the prevalence of lifetime illicit drug use to decrease with older age of first marijuana use. Among lifetime marijuana users reporting their onset after age 20, an estimated 1.1 percent used heroin, 16.4 percent used cocaine, and 20.6 percent used any psychotherapeutics nonmedically in their lifetime. Among persons who had never used marijuana, less than 1 percent had ever used cocaine or heroin, but 5.1 percent had used psychotherapeutics nonmedically.

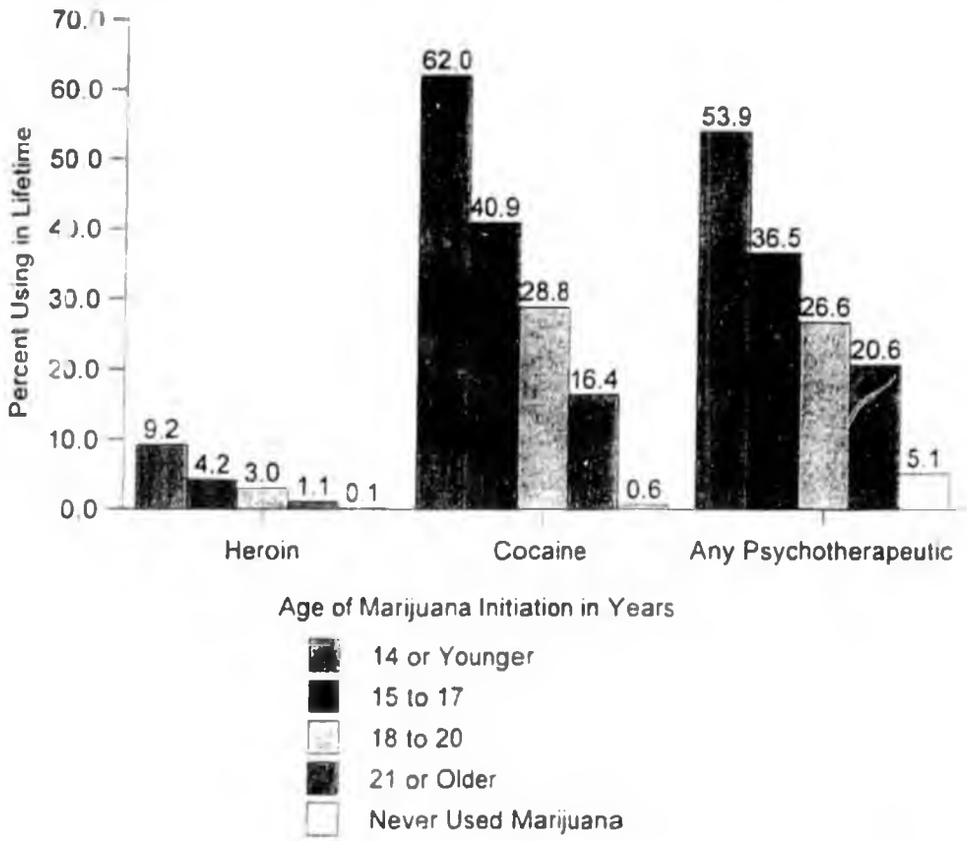
Similar patterns of past year use of these illicit drugs across the four groups of age at first marijuana use were observed. An estimated 6.9 percent of early-onset marijuana users (onset at age 14 or younger) used cocaine in the past year compared with only 0.8 percent of those initiating after age 20. An estimated 11.5 percent of early-onset marijuana users (onset at age 14 or younger) used any psychotherapeutics in the past year, while 2.9 percent of those initiating after age 20 did so.

For marijuana users aged 26 to 34 and those aged 35 to 49, rates of lifetime illicit drug use were generally higher among adolescence-onset marijuana users than among users initiating during adulthood. Because of a low prevalence of other illicit drug use among marijuana users aged 50 or older and very low proportions of past year heroin use across all three age groups (less than 1 percent), the relationship between the use of these illicit drugs and the onset age of marijuana use was less clear for them.

6.2.2 Heavy Illicit Drug Use

Among all lifetime marijuana users aged 26 or older, early-onset users not only had relatively higher proportions of recent (past year) heavy marijuana use than adult-onset users.

Figure 6.1 Prevalence of Lifetime Use of Heroin, Cocaine, and Psychotherapeutics among Adults Aged 26 or Older, by Age of Marijuana Initiation: 1999 and 2000

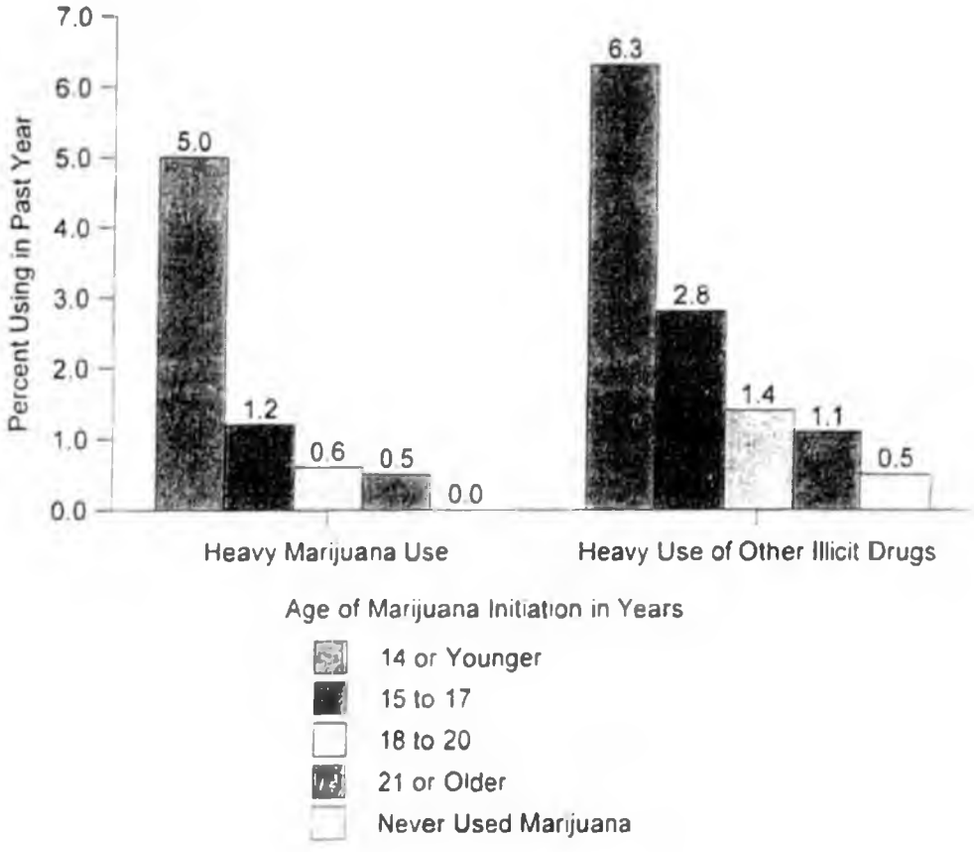


Note: Nonmedical use of any prescription-type psychotherapeutic indicates using pain relievers, tranquilizers, stimulants, or sedatives at least once. Indicated use does not include over-the-counter drugs.

Source: SAMHSA, Office of Applied Studies, National Household Survey on Drug Abuse, 1999 and 2000.

but they also reported high proportions of heavy use of other illicit drugs (Table 6.2 and Figure 6.2). An estimated 5.0 percent of those initiating marijuana at age 14 or younger were recent heavy marijuana users compared with less than 1 percent of those with an onset age of 18 years or older. Likewise, 6.3 percent of those initiating marijuana at age 14 or younger were recent heavy users of other illicit drugs in comparison with about 1 percent of those with an onset age of 18 years or older. A similar pattern also was observed among two age groups of marijuana users (i.e., adults aged 26 to 34 and those aged 35 to 49). There was an insufficient number of heavy illicit drug users among the older age group (i.e., aged 50 or older) to allow for such a comparison. Less than 1 percent of adults who had never used marijuana reported heavy use of other illicit drugs.

Figure 6.2 Prevalence of Past Year Heavy Marijuana Use and Heavy Use of Other Illicit Drugs among Adults Aged 26 or Older, by Age of Marijuana Initiation: 1999 and 2000



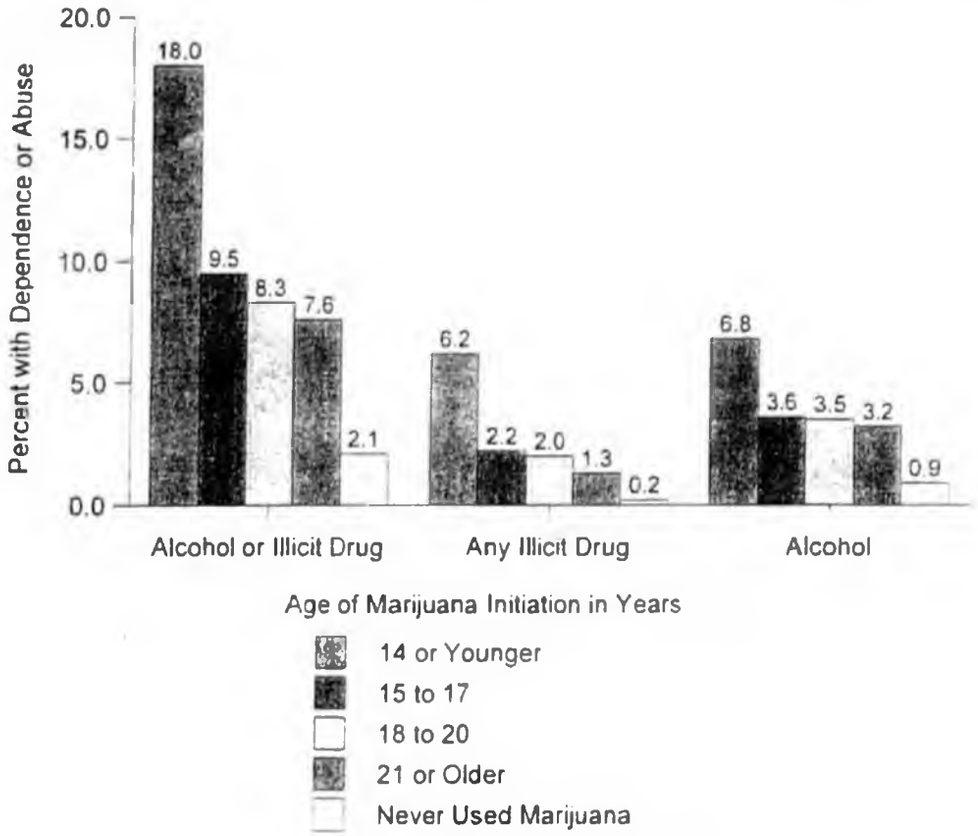
Note: Heavy marijuana use refers to using marijuana on 300 or more days in the past year. Heavy use of other illicit drugs refers to using cocaine, hallucinogens, inhalants, heroin, or any prescription-type psychotherapeutic used nonmedically (i.e., pain relievers, sedatives, tranquilizers, or stimulants) on at least 50 days in the past year.

Source: SAMHSA, Office of Applied Studies, National Household Survey on Drug Abuse, 1999 and 2000.

6.2.3 Substance Dependence and/or Abuse

The estimated past year prevalence of dependence on and abuse of alcohol or illicit drugs by age at first use of marijuana is summarized in Table 6.3 and Figure 6.3. Overall and among those aged 26 to 49, prevalence rates of dependence on or abuse of an illicit drug and prevalence rates of dependence on or abuse of either alcohol or an illicit drug were highest among those who started to use marijuana at age 14 or younger. An estimated 6.2 percent of those initiating marijuana before age 15 abused or were dependent on an illicit drug in the past year compared with 1.3 percent of those initiating marijuana at age 21 or older. Similarly, 18.0 percent of early-onset (onset before age 15) marijuana users were classified with dependence on or abuse

Figure 6.3 Prevalence of Past Year Alcohol and/or Illicit Drug Dependence or Abuse among Adults Aged 26 or Older, by Age of Marijuana Initiation: 2000



Note: Illicit drug dependence or abuse indicates dependence on or abuse of at least one of the following drugs: marijuana/hashish, cocaine (including crack), heroin, hallucinogens (including LSD and PCP), inhalants, or any prescription-type psychotherapeutic used nonmedically. The alcohol-only data refer to just dependence on alcohol, not alcohol abuse. Dependence or abuse is based on the definition found in the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) (APA, 1994).

Source: SAMHSA, Office of Applied Studies, National Household Survey on Drug Abuse, 2000.

of either alcohol or an illicit drug in comparison with 7.6 percent of those who first used marijuana after age 20.

Even when the prevalence was restricted to dependence and was specific to alcohol, an illicit drug, marijuana, or an illicit drug other than marijuana, prevalence rates of dependence for each outcome were consistently found to be highest among marijuana users who started their first use at age 14 or younger.

Among adults who had never used marijuana, the prevalence of past year alcohol and/or illicit drug abuse or dependence was very low. Only about 0.2 percent of them were classified with dependence on or abuse of an illicit drug and 0.9 percent were dependent on alcohol. In

addition, there was a tendency among those who had never used marijuana for the prevalence of illicit drug abuse or dependence to be higher among young adults aged 26 to 34 years (0.4 percent), but for the prevalence of alcohol dependence to be slightly higher among persons aged 35 to 49 (1.4 percent).

6.3 Multiple Logistic Regression Models

The estimated strength of associations of age at first marijuana use with the use of other illicit drugs and/or recent substance dependence and abuse was determined via multiple logistic regression procedures. Each logistic regression model also included age, gender, race/ethnicity, and educational level. Adjusted ORs, denoting the estimated association, that were derived from the multiple logistic regression procedures are discussed in this section.

6.3.1 Adjusted Odds Ratios of Use of Heroin, Cocaine, and Psychotherapeutics Nonmedically

Adjusted ORs for use of heroin, cocaine, and psychotherapeutics among lifetime marijuana users aged 26 or older are displayed in Table 6.4 (lifetime use) and Table 6.5 (past year use).

6.3.1.1 Heroin

With statistical adjustment for demographic characteristics, age at onset of marijuana use was significantly associated with lifetime heroin use (Table 6.4). In particular, onset before age 15 strongly predicted lifetime heroin use. Adjusted ORs of ever using heroin among lifetime marijuana users were 15.5 for those reporting first marijuana use at age 14 or younger, 6.1 for those initiating between the ages of 15 and 17, and 3.5 for those initiating between the ages of 18 and 20 as compared with those experiencing onset at age 21 or older. Among marijuana users, younger adults were significantly less likely to have ever used heroin than older adults aged 50 or older (OR = 0.2 for adults aged 26 to 34; OR = 0.5 for adults aged 35 to 49). Male marijuana users were an estimated 1.6 times more likely than female users to have ever used heroin. Relative to blacks, whites were at lower odds of using heroin in the lifetime. Educational level was not found to be associated with odds of lifetime heroin use. Age at first marijuana use was not associated with past year heroin use in the adjusted logistic regression model (Table 6.5).

6.3.1.2 Cocaine

Age at onset of marijuana use was highly associated with lifetime and recent cocaine use, particularly for those who initiated before age 15. These persons were 7 to 8 times

more likely than those who initiated at age 21 or older to use cocaine (Tables 6.4 and 6.5). Lifetime marijuana users who were male and American Indian or Alaska Native (relative to black) also had increased rates of lifetime cocaine use. The analysis of recent cocaine use found that male gender and less than a high school education predicted increased odds of using cocaine in the past year (Table 6.5). In addition, white and Asian/Pacific Islander/Native Hawaiian lifetime marijuana users were less likely than black users to use cocaine recently.

6.3.1.3 Psychotherapeutics

Early onset of marijuana use also predicted increased odds of nonmedical use of any psychotherapeutic drug in the lifetime and past year (OR = 5.3 for lifetime use; OR = 3.4 for past year use). Younger adult marijuana users (aged 26 to 34) were less likely than older users (aged 50 or older) to report using psychotherapeutics in the lifetime, but they were significantly more likely to use them in the past year. Male marijuana users had decreased odds of using psychotherapeutics in the past year (OR = 0.8). Compared with black marijuana users, white, Hispanic, and American Indian/Alaska Native users had increased odds of recent psychotherapeutic use. Persons with less than high school schooling also had an increased likelihood of using psychotherapeutics in the past year.

6.3.2 Adjusted Odds Ratios of Heavy Illicit Drug Use

Adjusted ORs of past year (recent) heavy illicit drug use (marijuana and other illicit drugs) are summarized in Table 6.6. Early-onset of marijuana use (before age 15) was significantly associated with the increased odds of heavy use of marijuana (OR = 5.3) and other illicit drugs (OR = 4.5). Marijuana initiation between the ages of 15 and 17 also predicted heavy use of other illicit drugs (OR = 2.1). Male marijuana users were an estimated 2.1 times more likely than female users to report heavy marijuana in the past year. Lifetime marijuana users who did not attend college also were at increased odds of using an illicit drug heavily in the past year.

6.3.3 Adjusted Odds Ratios of Substance Dependence and/or Abuse

This section includes results of multiple logistic regression analyses of the following outcomes in relation to age at first use of marijuana among lifetime marijuana users aged 26 or older (Tables 6.7 to 6.9): (1) illicit drug dependence or abuse, (2) alcohol or illicit drug dependence or abuse, (3) alcohol dependence, (4) illicit drug dependence, (5) marijuana dependence, and (6) other illicit drug dependence.

Onset of marijuana use before age 15 significantly predicted increased odds of meeting the criteria for dependence on and/or abuse of either alcohol and/or an illicit drug in the past year (OR = 4.7 for an illicit drug; OR = 1.9 for alcohol or other illicit drugs). Black marijuana users

had an increased likelihood of being dependent on or abusing an illicit drug than white and Asian/Pacific Islander/Native Hawaiian users. Less educated lifetime marijuana users (less than high school) were an estimated 1.8 times more likely to be classified with dependence on or abuse of an illicit drug recently, while age and gender were not associated with any odds of being dependent on or abusing illicit drugs (Table 6.7). Lifetime marijuana users who were aged 26 to 34, male, or had not attended college at the time of the survey had slightly increased odds of being dependent on or abusing alcohol or an illicit drug in the past year.

Adjusted ORs of alcohol dependence and illicit drug dependence among lifetime marijuana users are shown in Table 6.8. Age at marijuana initiation, age, and race/ethnicity were not found to predict recent alcohol dependence. In comparison, male and less educated marijuana users were at increased odds of being alcohol dependent in the past year. When the outcome of the logistic regression model was specific to illicit drug dependence, early-onset marijuana users (before age 15) were an estimated 6.2 times more likely than adult-onset users to be dependent on one or more illicit drugs in the past year. Relative to black marijuana users, white, Asian/Pacific Islander/Native Hawaiian, and American Indian or Alaska Native users had decreased odds of being classified with illicit drug dependence.

Table 6.9 further examines the estimated association between the onset age of marijuana use and recent illicit drug dependence. The multiple regression procedures revealed that the onset of marijuana use before age 15 was associated with recent dependence on both marijuana and other illicit drugs. In fact, onset before age 15 was associated with close to a tenfold excess in the odds of being classified with marijuana dependence than those who initiated marijuana in adulthood, independent of the influences of age, gender, race/ethnicity, and educational level. Marijuana users with less than a high school education were 3 times more likely than those who had attended college to be dependent on other illicit drugs recently.

6.4 Substance Dependence and/or Abuse Among Past Year Marijuana Users

This section focuses on dependence or and abuse of substances among lifetime marijuana users aged 26 or older who also used marijuana in the past year. The analyses presented in Section 6.3 demonstrate a high correlation between age at first marijuana use and subsequent patterns of substance use among adults aged 26 or older. Early-onset marijuana users are clearly more likely than adult-onset users to use drugs heavily and to have dependence and abuse problems later in life. However, these results do not indicate whether the higher rate of problematic use is simply because early-onset users are more likely to continue using illicit drugs as they age, making them more susceptible to problems, or whether their use of marijuana at a young age is a predictor of problematic use independent of their use history. Although it is not possible to fully explore this question with the limited data available in the NHSDA on drug

use history, some indication of the independent effect of age at first use can be obtained by restricting analyses to persons who used marijuana in the past year.

6.4.1 Estimated Prevalence of Illicit Drug Dependence and/or Abuse, by Age of Marijuana Initiation

Table 6.10 displays past year prevalence of illicit drug dependence or abuse, alcohol or illicit drug dependence or abuse, and specific substance dependence among past year marijuana users aged 26 or older. These prevalence estimates are presented by age of marijuana initiation (14 or younger, 15 to 17 years, 18 to 20 years, and 21 or older).

The highest prevalence of illicit drug dependence or abuse, alcohol or illicit drug dependence or abuse, marijuana dependence, and other illicit drug dependence was found among those in the youngest group of age of first marijuana use. Among past year marijuana users, one fifth of those initiating marijuana before age 15 were classified with illicit drug dependence or abuse in the past year compared with approximately one tenth of those initiating marijuana after age 15. Similarly, about 40 percent of those with their onset of marijuana before age 14 met the criteria for dependence on or abuse of either alcohol or other illicit drugs compared with 16.7 percent of those with an onset after age 20.

With respect to alcohol dependence, approximately 10 percent of users with an onset of marijuana use before age 21 were dependent on alcohol in comparison with about 5 percent of those with an onset after age 20. The highest prevalence (15.2 percent) of illicit drug dependence was noted among those initiating use before age 15, while the lowest prevalence (3.4 percent) of illicit drug dependence was among those reporting their first use after age 20. Approximately 8 percent of those with an onset between ages 15 and 20 were dependent on an illicit drug.

Only 2.1 percent of those with their onset of marijuana after age 20 were dependent on marijuana in the past year, while 8.8 percent of those within the 14 or younger group, 4.7 percent of those within the 15 to 17 onset group, and 7.1 percent of those within the 18 to 20 onset group were dependent on marijuana. The prevalence of other illicit drug dependence decreased with increased age strata of first marijuana use. An estimated 8.6 percent of those with an onset before age 15 and 4.2 percent of those with an onset between the ages of 15 and 17 were dependent on other illicit drugs in the past year, while less than 3.0 percent of those with an onset at age 18 or older were classified with other illicit drug dependence.

6.4.2 Adjusted Odds Ratios of Substance Dependence and/or Abuse

The association between age at first use of marijuana and substance dependence and/or abuse among past year marijuana users aged 26 or older was examined using multiple logistic

regression procedures. Adjusted ORs denote the estimated strength, holding constant the potential confounding influence of other demographic characteristics. Table 6.11 summarizes the logistic regression models for two dependence/abuse outcomes: (a) illicit drug dependence or abuse and (b) alcohol or illicit drug dependence or abuse. Models for alcohol dependence and illicit drug dependence are displayed in Table 6.12. Finally, models for marijuana dependence and other illicit drug dependence are shown in Table 6.13.

With statistical adjustment for demographic characteristics, onset of marijuana use before age 18 predicted increased odds of being classified with dependence on or abuse of either alcohol or other illicit drugs among adult marijuana users who reported the use in the past year (Table 6.11). Relative to an onset of marijuana use after age 20, an onset of use between the ages of 18 and 20 was not significant in predicting recent substance dependence or abuse. Compared with black marijuana users, white users were at decreased odds of meeting the criteria for illicit drug dependence or abuse in the past year (OR = 0.5). Recent marijuana users with a high school diploma had decreased odds of illicit drug dependence or abuse when compared with users who attended college.

Among recent marijuana users, age at onset of marijuana use was not found to be associated with alcohol dependence in the model (Table 6.12). In comparison, an onset of marijuana use before age 21 was associated with an increased likelihood of being classified with illicit drug dependence as compared with users with an onset at age 21 or older. Those with an onset before age 15 were an estimated 8.3 times more likely than those with an onset after age 20 to be dependent on one or more illicit drugs. Those with an onset between the ages of 15 and 20 were about 3 times more likely than those with an onset after age 20 to be dependent on one or more illicit drugs. As noted in the finding for illicit drug dependence or abuse, white recent marijuana users were less likely than black users to be dependent on an illicit drug (OR = 0.4).

Finally, multiple logistic regression showed that, among adult recent marijuana users, early-onset of marijuana use increased the likelihood of being dependent on both marijuana and other illicit drugs (Table 6.13). Relative to those with an onset of marijuana use after age 20, those reporting an onset before age 15 had an estimated OR of 5.1 for marijuana dependence and an OR of 17.0 for other illicit drug dependence. In addition, recent marijuana users aged 50 years old or older and black users were more likely to be classified with dependence on other illicit drugs than younger and white recent marijuana users.

Table 6.1 Percentages with *Lifetime and Past Year Use of Heroin, Cocaine, and Psychotherapeutics* among Adults Aged 26 or Older, by Age at First Marijuana Use and Age Groups: 1999 and 2000

Age in Years	Age of Marijuana Initiation in Years	Heroin		Cocaine		Any Psychotherapeutic	
		Lifetime	Past Year	Lifetime	Past Year	Lifetime	Past Year
Total	14 or younger	9.2	0.6	62.0	6.9	53.9	11.5
	15-17	4.2	0.2	40.9	3.5	36.5	5.6
	18-20	3.0	0.1	28.8	1.8	26.6	3.9
	21 or older	1.1	0.2	16.4	0.8	20.6	2.9
	Never used marijuana	0.1	0.0	0.6	0.1	5.1	1.2
26-34	14 or younger	5.1	0.1	57.5	8.9	48.6	12.3
	15-17	2.3	0.3	34.5	4.5	29.8	7.0
	18-20	1.2	0.1	19.4	2.4	19.4	5.1
	21 or older	0.5	0.0	14.9	1.5	17.4	5.0
	Never used marijuana	0.1	0.0	1.0	0.1	6.6	1.8
35-49	14 or younger	11.6	1.0	65.7	5.2	57.7	10.9
	15-17	4.8	0.2	44.3	3.0	39.8	5.1
	18-20	3.0	0.1	32.2	1.5	27.6	3.4
	21 or older	0.8	0.5	20.2	1.4	20.5	3.3
	Never used marijuana	0.1	0.0	1.2	0.1	6.2	6.2
50+	17 or younger	13.4	0.0	37.4	6.0	38.5	4.1
	18-20	5.8	0.2	29.6	2.0	33.2	4.0
	21 or older	1.5	0.0	14.1	0.2	21.5	2.1
	Never used marijuana	0.0	0.0	0.2	0.0	4.1	1.0

Note: Nonmedical use of any prescription-type psychotherapeutic indicates using pain relievers, tranquilizers, stimulants, or sedatives at least once. Indicated use does not include over-the-counter drugs.

Source: SAMHSA, Office of Applied Studies, National Household Survey on Drug Abuse, 1999 and 2000.

Table 6.2 Percentages with *Past Year Heavy Marijuana Use and Heavy Use of Other Illicit Drugs* among Adults Aged 26 or Older, by Age at First Marijuana Use and Age Groups: 1999 and 2000

Age in Years	Age of Marijuana Initiation in Years	Heavy Marijuana Use	Heavy Use of Other Illicit Drugs
Total	14 or younger	5.0	6.3
	15-17	1.2	2.8
	18-20	0.6	1.4
	21 or older	0.5	1.1
	Never used marijuana	0.0	0.5
26-34	14 or younger	7.3	7.0
	15-17	1.7	3.2
	18-20	1.3	1.3
	21 or older	0.5	1.8
	Never used marijuana	0.0	0.6
35-49	14 or younger	3.5	5.5
	15-17	1.0	2.6
	18-20	0.4	1.6
	21 or older	0.7	1.7
	Never used marijuana	0.0	0.6
50+	17 or younger	0.0	6.1
	18-20	0.2	0.9
	21 or older	0.4	0.5
	Never used marijuana	0.0	0.4

Note: Heavy marijuana use refers to using marijuana on 300 or more days in the past year. Heavy use of other illicit drugs refers to using cocaine, hallucinogens, inhalants, heroin, or any prescription-type psychotherapeutic used nonmedically (i.e., pain relievers, sedatives, tranquilizers, or stimulants) on at least 50 days in the past year.

Source: SAMHSA, Office of Applied Studies, National Household Survey on Drug Abuse, 1999 and 2000