

Epidemiologic Status of Drug Abuse in Mexico

M. E. MEDINA-MORA,¹ C. R. TAPIA,² M. L. RASCÓN,¹
G. SOLACHE,² B. R. OTERO,¹ F. LAZCANO,² & M. C. MARIÑO¹



Abuse of alcoholic beverages and tobacco appear to constitute priority public health problems in Mexico, while abuse of other drugs is sufficiently widespread to justify concern. More specifically, a recent national survey (11) found that over 10% of the male subjects 18 to 65 years old met established international criteria for alcohol dependence, while about a quarter of those surveyed were active smokers. A total of 4.3% said they had used one or more drugs other than tobacco or alcohol at some time in their lives.

Generally speaking, it may be said that the abuse of alcoholic beverages and tobacco is endemic in many societies, while the abuse of other psychoactive substances presents epidemic features. Although the drug problem itself is not new, the same cannot be said for the forms it is assuming at the present time. The consequences extend beyond the health effects of substance abuse; they include the accompanying damage to families and society, changes in farming practices (to the detriment of basic food production), and the crime and violence generated by economic interest in illegal drug traffic.

In this same vein, as a country that produces marijuana and opium, and that

serves as a route to the United States for cocaine produced in the Andean region, Mexico is not exempt from the consequences of this situation; for even though most of these substances are destined for another market, a portion of them remains in the country.

This article's purpose is to review the epidemiologic status of drug abuse in Mexico over the past two decades. Accordingly, it summarizes the endemic health problems associated with alcohol and tobacco use and provides consumption figures for a variety of substances by a number of different population groups. The figures presented have been derived from surveys of households, school populations, and certain high-risk groups, as well as from user registry data and anthropologic studies.

Extensive use is made of the National Survey of Addictions conducted in 1988 by two organizations within the Ministry of Health—the General Directorate of Epidemiology and the Mexican Institute of Psychiatry (IMP) (1). This household survey obtained prevalence data on the use of nonprescription drugs—alcohol, tobacco, inhalants, marijuana, cocaine, other coca derivatives, hallucinogens, opium, and heroin—as well as unpre-

¹Mexican Institute of Psychiatry, Division of Epidemiologic and Social Research (Instituto Mexicano de Psiquiatría, División de Investigaciones Epidemiológicas y Sociales). Mailing address: Antiguo Camino a Xochimilco 101, México, D.F. 14370, Mexico.

²Health Secretariat, Bureau of Epidemiology (Secretaría de Salud, Dirección General de Epidemiología), México, D.F., Mexico.

scribed use³ of prescription drugs including narcotic analgesics, sedatives, tranquilizers, amphetamines, and other stimulants within a random sample of 12,557 individuals between the ages of 12 and 65.

The sample was selected by using the Ministry of Health's master sampling framework. Only residents of urban localities with over 2,500 inhabitants, which accounted for 65% of the national population, were considered. The sample design was stratified and the sample was selected in several stages. Only one individual per household was interviewed; 84% of those sampled provided a response. The survey results were analyzed taking into account differences in the probability of selection. Handled in this manner, the data yielded results applicable to the national population and to each of seven national regions.

CONSUMPTION OF TOBACCO, ALCOHOL, AND OTHER PSYCHOACTIVE SUBSTANCES

Alcohol abuse is an endemic problem in Mexico. In 1986 the average person 15 years of age or over consumed 66 liters of alcoholic beverages containing roughly 4.7 liters of ethanol (2). Relative to 1974, consumption of brandy and rum in 1986 showed increases, while that of whiskey, gin, and vodka showed declines (Table 1). These rates of consumption are lower than ones that have been reported by certain other countries (3, 4). However, the consequences appeared greater than those found for populations with lower per capita consumption (5).

³Use without prescription was defined as any use taking place without a physician having prescribed the drug in question—or its use for a longer time, in a greater quantity, or for any reason other than that for which it was prescribed.

Problems associated with tobacco use are currently among the leading causes of morbidity and mortality in Mexico. This habit has shown a rising trend as national tobacco production has increased. In 1974 there were 39,000 hectares⁴ under cultivation, while by 1980 this area had increased to 49,000 hectares; 80% of the output currently goes for national consumption, given the declining demand in the industrialized countries (6).

The Office of the Attorney General reports that 163,212 plantings of poppies covering 15,169 hectares and 137,760 plantings of marijuana covering 18,523 hectares were destroyed in 1988 (7).

The scale of these figures, far exceeding those reported in 1963, may be attributed to the campaign against the production of these drugs and drug trafficking. Regarding heroin, this drug has long been available. However, it is not in general use in Mexico, being limited almost exclusively to the northwestern border area.

Marijuana has a long history in Mexico. It was used ritually by the Tepehuas, and as early as 1772 reference was made to its consumption in Indian communities, where it was known as "venerable child" (8). Later used by soldiers and other groups with relatively low socioeconomic status, it was not until the late 1960s and early 1970s that it came to be consumed by young people of all social strata.

Mexico also has many kinds of hallucinogenic plants. Some of them have been known since pre-Columbian times (8). Even today the use of hallucinogenic substances for magical-religious purposes can be seen in some indigenous cultures. Among the Tarahumaras, for example, at least eight different types of cactus with psychotropic properties have been described, the most famous being peyote;

⁴One hectare = 2.47 acres.

Table 1. Per capita consumption of alcoholic beverages among the population 15 years of age and over in Mexico, 1974–1986.

Beverage	Per capita consumption (liters of beverage)			
	1974	1984	1985	1986
Pulque ^a	8.25	6.00	—	—
Beer	64.00	61.00	63.00	62.00
Brandy	1.17	2.48	2.58	2.40
Rum	0.49	0.98	0.98	0.88
Tequila	0.68	0.74	0.71	0.44
Whiskey, gin, or vodka	0.45	0.28	0.32	0.29
Table wine	0.21	0.67	0.58	0.37
Total	75.25	72.15	68.17	66.38

^aAn alcoholic beverage produced through fermentation of aquamil, a juice extracted from a Mexican agave.

Source: Instituto Mexicano de Psiquiatría (1).

among the Mazatecos the use of *Salvia divinorum* is common; and among the Mixtecs use of the famous hallucinogenic mushrooms is well-known.

Use of these substances outside such cultural contexts is not very widespread. However, young people who report having experimented with the effects of hallucinogens have typically used plants of natural origin more frequently than synthetic substances like LSD (9).

Increases in the amount of cocaine being shipped through Mexico are indicated by data from the current campaign against drug trafficking (7, 10). Specifically, over the entire 1975–1984 period only 2,303.5 kg of cocaine were seized, whereas during the first nine months of 1986 the seizures totaled 4,679.2 kg, and in 1988 they totaled 13,791.1 kg.

Alcoholism and Morbidity

Alcohol abuse and smoking are Mexico's two principal addiction-related public health problems. According to the results of the 1988 National Survey of Addictions, there were marked differences between the sexes, 82% of the males being "drinkers" (defined as people consuming alcohol during the preceding 12 months) as compared to 44% of the females. The percentage of drinkers

also declined somewhat in younger age groups, 36% of the boys and 22% of the girls 12–17 years old being classified as drinkers.

Daily consumption of alcohol is not a common practice in Mexico, but consumption to the point of intoxication is frequent. Table 2 gives the prevalences of various symptoms of alcohol dependence among people 18 to 65 years of age in

Table 2. Frequency of some symptoms of alcohol dependence among the Mexican population 18 to 65 years of age, by sex, as indicated by the 1988 National Survey of Addictions.

Symptom	% Men	% Women
Lack of satisfaction without the use of alcohol	11.58	0.74
Persistence in abuse despite its harmful consequences	5.60	0.68
Tolerance	2.57	0.15
Abstinence	8.69	0.65
Consumption to relieve abstinence	13.60	0.83
Reduction of behavior pattern	8.26	0.62
Lack of control	19.39	1.40
Compulsive use of alcohol	4.88	0.53
Rapid reappearance of syndrome after a period of abstinence	2.79	0.39

Source: Mexico, Ministry of Health, Bureau of Epidemiology and Mexican Institute of Psychiatry (11).

1988. Overall, some 11% of the men and 0.6% of the women over 18 years of age appeared to meet the criteria specified in the International Classification of Diseases (11) for alcohol dependence (1). Moreover, cirrhosis of the liver, a disease linked to alcohol abuse, is one of the 10 leading causes of death in the general population and the first cause of death among males 35–54 years old (12).

Alcohol abuse is also related to a large share of social problems. For example, official statistics (13) indicate that the percentage of automobile accidents occurring when the driver was drunk increased from 8% in 1968 to 16% in 1983, and that the percentage of crimes committed by individuals under the influence of alcohol rose from 17% in 1975 to 23% in 1984. In all, 21% of the people treated for injuries in Mexico City's emergency hospitals had positive alcohol readings (more than 10 mg of alcohol per 100 ml of blood), as did 22% of those so treated in Acapulco in 1987 (14). In a like vein, 24% of the reported suicides in 1980 had a significant history of alcohol-related problems, and 38% had blood alcohol levels exceeding 10 mg/100 ml (15). Also, 49% of those convicted of homicide in 1985 admitted having consumed alcoholic beverages to excess before the crime (16).

Regarding hospital patients, a 1986 survey conducted in a public general hospital found that 10% of the patients treated in the emergency room, 4% of the hospitalized patients, and 3% of those given outpatient consultations were "heavy drinkers" (15). Another study (17) showed that 19% of the cases treated in emergency hospitals for medical complications showed symptoms of alcohol dependence. In addition, an investigation carried out by the National Institute of Nutrition (18) on a sample of hospitalized patients and outpatients found that 30% of the men and 5% of the women were heavy drinkers, while 17% of the total

sample met the alcohol dependence criteria previously cited.

Smoking and Morbidity

With regard to smoking, in 1971 the Pan American Health Organization reported that 44% of the men and 16% of the women in Mexico were smokers (19). In contrast, a study by the Mexican Institute of Psychiatry (IMP) (20) indicated that as of 1980, 43% of the three populations surveyed smoked. However, the results of a national health survey carried out by the General Directorate of Epidemiology in 1986–1987 found that smokers (current smokers at the time of the interview) constituted 17.5% of the national population over 12 years old (some 9.5 million people), while if those under 18 were excluded this percentage rose to 21.4%. The survey also pointed to a geographic consumption gradient with a northwest-southeast orientation (21) and found that of every 100 smokers, 84 consumed from one to 10 cigarettes per day. Persons obviously dependent on tobacco who smoked 20 or more cigarettes a day were found to constitute only 2.8% of all smokers.

The 1988 National Survey of Addictions, which was methodologically more appropriate for research on smoking than the national health survey, found the prevalence of active smokers (subjects that reported having smoked during the 30 days before the interview) 12–65 years old to be 24.7%. The highest prevalence (29.3%) was found in the Federal District, while the lowest (18.3%) was found in the Southern Region encompassing the states of Chiapas, Tabasco, Campeche, Quintana Roo, and Yucatán. The survey indicated that some 63.2% of all the smokers in the country smoked daily, and that 13% consumed more than 20 cigarettes daily. The highest prevalence of daily smokers, and also of those who

smoked more than 20 cigarettes daily, was found in the Northwestern Region encompassing the states of Baja California, Baja California Sur, Sonora, and Sinaloa. With regard to giving up smoking, the survey found the national percentage of ex-smokers to be 21.8% of the total population surveyed.

Tobacco consumption has been associated with a number of disabling and fatal diseases. Specifically, causal relationships have been demonstrated between smoking and cancers of the lung, bladder, cervix, and pancreas; coronary disease; cerebrovascular accidents; chronic obstructive lung disease; and low birthweight in children of smoking mothers (22).

In 1986, 10,124 deaths from malignant tumors of the respiratory system (including laryngeal, tracheal, bronchial, and lung tumors) were reported, together with 1,390 deaths from cancer of the pancreas. In the previous year, acute myocardial infarction was the fifth leading cause of death in the general population; chronic bronchitis, emphysema, and asthma was the ninth; cerebrovascular accidents were thirteenth; and malignant tumors of the trachea, bronchi, and lungs were seventeenth (12).

Other Drugs

Of the population surveyed in 1988, 7% of the males and 2% of the females (representing a nationwide total of 1,318,000 people between the ages of 12 and 65) had used one or more drugs other than tobacco and alcohol at some time. Active users (those using such drugs within 30 days of the interview) constituted 1.4% and 0.5% of the respective male and female study samples. As a group, males in the 12-34 age range were found to include the highest prevalences of active (within the past month) users (1.8%) and of total (once or more in a lifetime) users

(7.8%). Overall, the percentage of current and former users among males (7.04%) was substantially higher than the same percentage among females (2.17%). The drugs used by the largest percentages of the 12-34 male population were marijuana (6.5%), tranquilizers (1.0%), inhalants (2.0%), stimulants (0.4%), and cocaine (0.8%). Only a very small percentage of the population was found to have used heroin.

Table 3 shows the prevalences found by the study of use within the last month, within the last year, and within the subjects' lifetimes, broken down by sex and age group. The percentages having used any of these drugs within the last month were small. However, the figures indicate that men have tended to consume disproportionately large amounts of marijuana and inhalants, while women have tended to prefer psychotropic medications.

The use of inhalants was found to begin at a very early age (typically between 12 and 17 years), while marijuana and hallucinogen use typically began between 18 and 25 years of age and cocaine use between 26 and 34.

Mexico's Northwestern Region (which includes the states of Baja California, Baja California Sur, Sonora, and Sinaloa) was found to have the highest prevalence of lifetime drug users (15% of the males and 2% of the females 12 to 65 years of age)—double the national average for males (7.04%). Within this region, the State of Baja California Sur had the lowest prevalence, while the other three states all had about the same somewhat higher prevalence.

The second-ranking area in terms of user prevalence was the North-Central Region. This area, which contains the states of Jalisco, Zacatecas, Nayarit, Colima, and Aguascalientes, was found to have slightly higher user prevalences than those observed at the national level.

Table 3. Percentages of the general population using substances other than alcohol and tobacco in Mexico, by age and sex, as indicated by the 1988 National Survey of Addictions.

Substances	12-34 year age group						35-65 year age group					
	30 day users ^a		1 year users ^b		Lifetime users ^c		30 day users		1 year users		Lifetime users	
	% Males	% Females	% M	% F	% M	% F	% M	% F	% M	% F	% M	% F
Narcotic analgesics	0.00	0.16	0.00	0.18	0.04	0.20	0.12	0.03	0.13	0.05	0.25	0.10
Tranquilizers	0.26	0.17	0.69	0.38	1.00	0.64	0.15	0.06	0.22	0.24	0.50	0.62
Sedatives	0.00	0.02	0.03	0.02	0.08	0.07	0.00	0.01	0.00	0.12	0.22	0.12
Stimulants	0.08	0.11	0.25	0.17	0.37	0.70	0.00	0.12	0.05	0.14	0.93	0.79
Inhalants	0.17	0.01	0.65	0.06	1.99	0.11	0.00	<0.01	<0.01	<0.01	0.62	0.02
Marijuana	1.44	0.02	2.85	0.25	6.45	0.43	0.05	0.00	0.57	0.00	3.56	0.88
Hallucinogens	0.05	0.00	0.33	0.00	0.67	0.04	0.00	0.00	0.00	0.00	0.32	0.08
Cocaine	0.44	0.00	0.54	0.00	0.80	0.04	0.00	0.00	0.01	0.00	0.39	0.01
Heroin/opium	0.00	0.00	0.19	0.00	0.34	0.01	0.00	0.00	0.00	0.00	0.01	0.00

^a Used substance in 30 days before interview.

^b Used substance in year before interview.

^c Used substance on at least one occasion sometime before interview.

Source: Mexico, Ministry of Health, Bureau of Epidemiology and Mexican Institute of Psychiatry (11).

The prevalence of male lifetime users found for this region was 8.4%, and that of users during the past month was 0.9%, while the respective national rates for males were 7.0% and 1.4%.

Comparison of these 1988 survey data for the Federal District with 1974 data obtained by Medina-Mora (23) indicates that the percentage of active narcotic analgesic users in the district (those who reported using unprescribed analgesics within the previous 30 days) declined significantly in the 1974–1988 period (from 1.57 to 0.9%), as did the percentages having used tranquilizers (from 0.54 to 0.06%), sedatives (from 1.31 to 0.03%), and stimulants (from 0.16 to 0.07%). However, the percentage ever having used marijuana appeared to increase (from 1.31 to 2.5%), as did the percentage having used inhalants (from 0.4 to 0.7%), although the percentage of active users (subjects employing any of these substances within the last 30 days) did not increase. Cocaine consumption, which was not detected in 1974, was observed in 1988.

These 1988 findings are similar to those of a 1986 study carried out among junior high and high school students in urban areas of the country (24). Inhalants, marijuana, and stimulants were found to be the most commonly used drugs, with lifetime user prevalences of 4.4%, 3.2%, and 3.4%, respectively. The prevalences of cocaine and heroin users were considerably lower (1.0 and 0.5%, respectively). These trends were confirmed by data obtained from patients treated in juvenile correction centers (25).

In 1986 the Drug Abuse Information Center of the IMP initiated a system for registering cases of drug use. Through this system, semiannual information is compiled on all cases entering health institutions and the justice system, regardless of the reason for admission. Six registration studies have been carried out so

far in the Federal District. Most of the cases registered involved men, although the proportion involving women is increasing. The drugs most frequently involved in these cases were marijuana and inhalants. Heroin was detected in fewer than 1% of the cases. Likewise, cocaine was infrequently mentioned, although the share of cases involving this drug showed a slight tendency to rise.

High-Risk Populations

Household surveys do not cover the homeless, nor do junior high and high school surveys cover nearly all of the school-age population, since education is compulsory only through the six primary grades. For these reasons, study of high-risk populations is important.

Mexico's economic crisis has increased the number of children and adolescents who contribute to their families' income by "working" in the streets at various activities—such as cleaning windshields, selling candy or similar products, helping businesses, or begging. This kind of activity favors initiation of children into the drug subculture, which in turn causes some to drop out of school and leave their families.

Several studies (26, 27) carried out among children under 18 working in Mexico City's streets have shown prevalences of drug users to be higher in this population than in populations with fixed domiciles (1, 24). One of these studies (26) found that 27% of the minors surveyed in the study area reported using inhalants at some time, and 22% said they used them daily. The use of marijuana at some time was reported by 10% of the sample interviewed, and daily use was reported by 1.5%. No other drug use was detected. The confidence interval for the lifetime prevalence estimates was $\pm 7\%$. Dropping out of school, low contact with the family (measured through

distribution of income to family versus personal needs), early initiation into working in the streets, use of drugs by siblings and friends, and migration from rural areas were all variables predictive of drug use. Multiple component analysis (Table 4) showed that these variables differentiated users from nonusers to a significant degree ($R^2 = 0.43$).

Another investigation (28) carried out among minors in suburban communities of other metropolitan areas confirmed the high prevalence of solvent abuse. It also found that users of these substances tended to modify their habits over time. The practice was usually abandoned after adolescence, though not necessarily after treatment (29), and most of the users replaced the inhalation of solvents with abuse of alcoholic beverages (27). If other drugs were not available, use of inhalants could continue into the adult years, though their use was found to be most common in groups under 20 years of age.

Another phenomenon related to drug use is the emergence of so-called "juvenile bands" that gather members typically between 11 and 29 years old, a modern version of city street gangs. Each collection of affiliated bands, commonly including some 2,000 young adults, is

typically subdivided into groups of approximately 20 members. The members' lack of employment and training alternatives encourages a life-style including drug use (especially use of marijuana and solvents), stealing, and other unlawful activities.

Another study (30) carried out on a group of heroin addicts showed that most of the users who requested treatment (87%) used the drug on a daily basis. Marijuana had usually been the drug of initiation. In no case was heroin identified as the first drug used. The users' average age was 29, and most of them (95%) were males.

On the other hand, data from the Tijuana Juvenile Integration Center indicate that in 1983 the proportion of female heroin users there had reached 18% (31). This center, which provides detoxification services and treats patients in the Northern Region, reported in 1984 that only 46% of its cases came from the city of Tijuana. Fifteen percent of the patients were foreigners and 45% were United States residents. In a similar vein, a 1978 study (32) carried out with 50 heroin users who were inmates of the Baja California State Prison found that 96% had been introduced to this drug in the city of Ti-

Table 4. Multiple component analysis of different variables predictive of drug use among minors working in the streets of Mexico City, 1982.^a

Predictive variable	% of users (n = 102)	% of nonusers (n = 227)	Coefficient
Destination of income:			
family needs versus personal needs	17	44	0.34
Initiation of street work: ^b			
at 5-9 years of age	27	26	
at ≥ 10 years of age	42	40	0.31
no response	31	34	
Migration to urban areas	32	5	0.30
Drug use in siblings or friends	42	16	0.26
School attendance	3	46	0.19

^a $R = 0.66$; $R^2 = 0.43$.

^b The average age at which street work commenced, plus or minus one standard deviation, was 8.7 ± 2.01 years for the users and 10.2 ± 2.56 years for the nonusers.

Source: Reference 26.

juana and the remaining 4% had been introduced to it in the United States. Also, the 1988 National Survey of Addictions found that 24% of the heroin users obtained the drug for the first time in the United States, while 59% obtained it in the border states of northern Mexico or in the North-Central Region. (In 17% of the cases the area of procurement was not reported.)

The average daily expenditure on heroin reported by the users studied in 1984 (31) was US\$190, approximately 50 times the minimum wage in the area surveyed. Ninety-two percent of the users said acquisition of the drug was "easy," and 19% were themselves involved in drug trafficking. More than half (70%) said family members or close friends also used heroin. The data obtained from these studies (31, 32) and from the 1988 National Survey of Addictions appear to indicate that the heroin subculture in Mexico is closely linked to contact with the population of the United States.

DISCUSSION AND CONCLUSIONS

Alcohol abuse and smoking constitute priority public health problems in Mexico, the morbidity and mortality associated with them being substantial. In the case of alcohol abuse, however, morbidity and mortality can be reduced significantly through standards for controlling the availability of alcoholic beverages—and through education directed at promoting moderate consumption, especially in high-risk situations such as before driving.

Few restrictive measures directed at smoking control have been applied in Mexico, nor has much been done to protect the health of passive smokers. Among such measures, prohibiting smoking in public places and setting aside special places for smokers appear especially advisable.

Regarding other drugs, inhalation of solvents for the purpose of intoxication appears to be the country's principal drug abuse problem—partly because the practice is widespread and partly because the principal user group consists of children and young people at a critical stage of rapid physical and emotional development.

Even though the percentages of people abusing other drugs is relatively low, in various cases these percentages appear to be rising. Therefore, it is important to establish adequate preventive measures—among other things by educating the public about the risks involved, taking advantage of experiences in other countries. Greater efforts should also be made to understand the forces of sociocultural supply and demand that have so far helped to control the spread of cocaine and heroin use in Mexico.

REFERENCES

1. Mexico, Secretaría de Salud, Dirección General de Epidemiología e Instituto Mexicano de Psiquiatría. *Encuesta nacional de adicciones*. Mexico City, 1989.
2. Instituto Mexicano de Psiquiatría, Centro de Información y Documentación sobre Alcohol, División de Investigaciones Epidemiológicas y Sociales. Unpublished data, 1987.
3. Makela, K., R. Room, E. Single, P. Sul-kunene, and B. Walsh. *Alcohol, Society, and the State: I. A Comparative Study of Alcohol Control, a Report of the International Study of Alcohol Control Experiences in Collaboration with the WHO Regional Foundation*. Addiction Research Foundation, Toronto, 1981.
4. Moser, J. *Prevention of Alcohol Related Problems: An International Review of Preventive Measures, Policies, and Programs*. Addiction Research Foundation, Toronto, 1980.
5. Rootman, I., and J. Moser. *Community Response to Alcohol Problems: Comparison of Results of Three Countries: Mexico, Zambia, and Scotland, Phase I*. National Institute on

- Alcohol Abuse and Alcoholism, Bethesda, MD, 1981.
6. Mexico, Secretaría de Salubridad y Asistencia, Consejo Nacional contra las Adicciones. *Programas contra el tabaquismo, alcoholismo, abuso de bebidas alcohólicas y farmacodependencia*. Mexico City, 1987.
 7. Procuración de Justicia. *Rev Mex Just* 6:101, Mexico City, 1988.
 8. Díaz, J. L. Ethnopharmacology of sacred psychoactive plants used by the Indians of Mexico. *Rev Pharmacol Toxicol* 17:647-675, 1977.
 9. Medina-Mora, M. E., P. Ryan, A. Ortiz, T. Campos, and A. Solis. A methodology for intensive case finding and monitoring of drug use in a Mexican community. *Bull Narc* 32(2):17-26, 1980.
 10. Mexico, Procuraduría General de la República. *Campaña contra el tráfico de drogas*. Mexico City, 1986.
 11. Edwards, G. Alcohol dependence: Provisional description of a clinical syndrome. *Br Med J* 1:1058-1061, 1976.
 12. Mexico, Secretaría de Programación y Presupuesto, Instituto Nacional de Estadística, Geografía e Informática. *Anuario estadístico de los Estados Unidos Mexicanos en 1984*. Mexico City, 1987.
 13. Mexico, Procuraduría General de Justicia del Distrito Federal. *Informe de la Dirección de Organización y Métodos*. Mexico City, 1984.
 14. Rosovsky, H., G. García, J. L. López, and A. Narvaez. El papel del consumo de alcohol en las urgencias médicas y traumáticas. In: Mexico, Instituto Mexicano de Psiquiatría. *Memorias de la IV Reunión de Investigación*. Mexico City, 1988, pp. 261-265.
 15. Terroba, G., M. T. Saltijeral, and R. del Corral. El consumo de alcohol y su relación con la conducta suicida. *Salud Pública Mex* 5(28):489-494, 1986.
 16. Heman, A. Personal communication, 1987.
 17. Rosovsky, H. Personal communication, 1987.
 18. De la Fuente, J. R., and D. Kershenobich. Detección oportuna del paciente alcohólico y de sus alteraciones hepáticas. *Salud Ment* 10(4):76-80, 1987.
 19. Organización Panamericana de la Salud. *Encuesta sobre las características del hábito de fumar en América Latina*. PAHO Scientific Publication 337. Washington, D.C., 1977.
 20. Puente Silva, F. Resultados de encuestas sobre el hábito de fumar en 3 muestras (población urbano-rural; personal médico de 7 centros hospitalarios; y personal de Petróleos Mexicanos). In: Mexico, Instituto Mexicano de Psiquiatría. *Memorias de la II Reunión de Investigación*. Mexico City, 1984, pp. 225-238.
 21. Tapia Conyer, R., F. Lazcano, M. Herrera, and J. Sepúlveda. El consumo de tabaco en México: Resultados de la Encuesta Nacional de Salud. *Epidemiología (Sistema Nacional de Salud de México)* 4(3):33-39, 1989.
 22. United States, Department of Health and Human Services. *Reducing the Health Consequences of Smoking: A Report of the U.S. Surgeon General*, 1988. DHHS 89-8411 (CDC). Washington, D.C., 1988.
 23. Medina-Mora, M. E. Prevalencia del consumo de drogas en algunas ciudades de la República Mexicana: Encuestas de hogares. *Enseñanza e investigación en psicología* 4(7):111-125, 1978.
 24. Castro, M. E., E. Rojas, G. García, and J. de la Serna. Epidemiología del uso de drogas en la población estudiantil: Tendencias en los últimos 10 años. *Salud Ment* 9(4):40-86, 1986.
 25. Mexico, Centros de Integración Juvenil. Investigación epidemiológica en escuelas. Mimeographed document. Mexico City, 1984.
 26. Medina-Mora, M. E., A. Ortiz, C. Caudillo, and S. López. Inhalación deliberada de disolventes en un grupo de menores mexicanos. *Salud Ment* 5(1):77-86, 1982.
 27. Leal, H., L. Mejía, L. Gómez, and O. Salinas. Estudio naturalístico sobre el fenómeno del consumo de inhalantes en niños de la ciudad de México. In: *Inhalación voluntaria de disolventes industriales*. Ed. Trillas, Mexico City, 1977, pp. 442-459.
 28. De la Garza, F., I. Mendiola, and S. Rabago. *Sociodrama, marginalidad y drogas*. Instituto Nacional de Servicios Sociales, Madrid, 1985.
 29. World Health Organization. *Adverse Health Consequences of Volatile Substance Inhalation: Report of a WHO Advisory Group Meeting on the Adverse Health Consequences of Volatile Solvents/Inhalants Held at the Mexican Institute of Psychiatry, Mexico City, April, 1986*. Geneva, 1986.

30. Hernández, D. J., and H. S. Sánchez. Investigación con 108 usuarios de heroína en la ciudad de Tijuana. Mimeographed document. Centros de Integración Juvenil, Mexico City, 1985.
31. Ramón, E., and R. Sánchez-Huesca. Incidencia 1983. Mimeographed document. Centros de Integración Juvenil, Mexico City, 1983.
32. Suárez-Toriello, J. E. *Farmacodependencia a heroína: Estudio en una comunidad cerrada, la penitenciaría de Baja California, México*. A.C. Serie Investigaciones 2. Centros de Integración Juvenil, Mexico City, 1989.



Drug and Alcohol Use among U.S. Adolescents

A National Adolescent Student Health Survey was conducted in 1987 to assess health risks of adolescent students in the United States and their perceptions of those risks. The survey, initiated by the Association for the Advancement of Health Education, American School Health Association, and the Society for Public Health Education, and supported by the United States Department of Health and Human Services, was administered to a total of 11,419 eighth and tenth grade students in randomly selected classrooms chosen from a national probability sample of 217 schools in 20 states. The following were the findings with regard to alcohol use: 77% of the eighth graders and 89% of the tenth graders said they had used alcohol; 31% of all respondents said they had used it before or during the sixth grade; and 26% of the eighth graders and 38% of the tenth graders reported having had five or more drinks on one occasion during the past two weeks. With regard to illicit drugs, 15% of the eighth graders and 35% of the tenth graders said they had used marijuana; approximately 5% of eighth graders and 15% of tenth graders reported having used it in the past month; and 4% of eighth graders and 8% of tenth graders reported having used cocaine.

Source: U.S. Centers for Disease Control, *MMWR* 38(9), 1989, as reported in World Health Organization, *Wkly Epidemiol Rec* 64(30):233-234, 1989.