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TRENDS AND EVOLUTION OF DRUG USE IN ADOLESCENTS OF MEXICO CITY: 1989-97¹

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This paper summarizes findings from the last high school survey conducted in Mexico City in 1997. The study is part of the series of surveys undertaken by the Mexican Institute of Psychiatry and the Ministry of Public Education since 1976. Results suggest a significant increase in the use of marijuana and cocaine among males: marijuana use grew from 2.2 percent in 1993 to 4.68 percent in the year prior to the study, and cocaine use grew from 1 percent to 4.1 percent during the same period. Solvents lost their place as drugs of preference, decreasing from 3.7 percent to 2.9 percent. The male-female ratio for drug use was 1-1.5; 14 percent of males and 9 percent of females reported having experimented with drugs. Among females, the rates of use for all drugs increased in this period, and solvents were consumed more often than cocaine.

INTRODUCTION

The life experiences of youth in modern societies, Mexico not being the exception, have changed quite significantly over the last two decades. These changes affect relationships with family and friends, encounters with education, the labor market, and lifestyles.

Though modernization has always involved differentiation, a plurality of lifestyles, a weakening of communal regulations, and a

sense of uncertainty, it seems that young people today, irrespective of their social background and gender, have to negotiate a set of risks largely unknown to their parents. Nowadays, being young involves new and much more diverse lifestyles, in which patterns of behavior and individual life chances have lost their predictability, along with the additional risks of drug availability and new forms of sexually transmitted diseases such as acquired

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immunodeficiency syndrome (AIDS). Along with many benefits of development, adolescents throughout the world seem to be engaging in unhealthy lifestyles.

After a long period of relatively low levels of drug use, with the exception of selected high risk groups (street children and gang members, among others), Mexico is experiencing important shifts in the drug scene. These trends include the use of new drugs, an increase in the number of drug users (particularly heavy users), and the integration into the drug culture of population subgroups previously not affected; as a consequence, health and social problems have also increased.

According to the National Household Survey of 1993 3.9 percent of persons age 12–65 reported ever experimenting with illegal substances (DGE and SSA 1993). The national high school survey of 1991 documented a rate as low as 8 percent for any use of substances other than tobacco and alcohol among these who have completed 7–12 years of school. In big metropolitan areas, the rate tends to be higher, reaching 11.2 percent in 1991 in Mexico City (Medina-Mora et al. 1993). Marijuana and solvents were then the drugs preferred by students.

The changing scenario is especially linked to an increase in cocaine use: in 1976, only 0.5 percent of students reported ever experimenting with this substance (Castro et al. 1986); the rate increased to 1.66 percent in 1993 (Rojas et al. 1998). According to a drug report information system that gathers data from 44 health and justice

institutions in the capital city (Ortiz et al. 1998), the preference for cocaine grew from 1.6 percent in 1986 to 39 percent in 1997. Also, at specialized drug treatment centers in different cities, the preference for cocaine among users grew from 12 percent in 1990 to 46 percent in 1997 (CIJ 1997).

Another phenomenon emerging is the fad of using designer drugs that was first documented in Mexico in the beginning of the 1990s. Abuse of crystal methamphetamine was documented in 1993 in specialized treatment centers at the northwestern border with the United States, but use then spread to many other cities (SISVEA, 1997). Methylenedioxymethamphetamine (MDMA) was first mentioned in Mexico City in 1994 as part of the drug report information system.

Among the risk factors associated with this expansion are the following: increased rates of alcohol abuse, especially binge drinking during weekends that augments the probability of experimenting with other drugs; exposure to an enlarged proportion of persons significant to the adolescent who participate in a culture of substance abuse and an increase in the perceived and actual availability of drugs in their environment (Medina-Mora et al. 1995 and 1997; Villatoro et al. 1997).

The purpose of this paper is to summarize the main findings from the last school survey conducted in Mexico City in the fall of 1997, and to describe the trends of drug use among high school students. This study is part of the series of student surveys

undertaken every 2–3 years by the Mexican Institute of Psychiatry and the Ministry of Public Education. As methods and

instruments have remained constant, trends of drug use might be derived from these cross-sectional studies.

METHOD

The source of data for this report is the 1997 School Survey conducted among high school students in Mexico City. The sample design provided data for each of the 16 administrative sectors of the city; this report provides data for the whole sample. All public and private schools were considered except military and art institutions, which represent less than 1 percent of this universe. The sample was selected from the official records of the Ministry of Public Education for this school level. This sampling frame registers schools, size of the student population, and groups within each level.

The sample design was stratified, with two stages of selection and by clusters, and self-weighted for groups and students. The stratification variables were secondary (7th–9th grade) and preparatory schools (10th–12th grade). Schools and groups within the selected schools were the sampling units for both stages. A uniform interval of selection was determined for each of the domains of interest (secondary and preparatory schools), and schools were grouped by each stratum in each of the administrative sectors. A cumulus of groups for the schools within each domain and sector was formed, and the groups were selected using an initial random number and a predetermined interval.

Based on the experience of previous surveys (De la Serna et al. 1991; Medina-Mora et al. 1993), the parameters used to obtain the sample size were a nonresponse rate of 20 percent and a design effect of .001. A total of 10,173 students (84 percent of the estimated sample) from 324 groups (96 percent of the original groups in the sample) completed the self-administered questionnaire. Of these, 48 percent were male and 52 percent were female; 70 percent were younger than 14, and 91 percent were 18 or younger.

The information was gathered through a self-administered standardized questionnaire that took an average of 40 minutes to complete. Validity and reliability of the instrument has been previously tested (Medina-Mora et al. 1981; Castro et al. 1986). It includes the core items suggested by the World Health Organization (WHO) for self-administered questionnaires (Johnston et al. 1998), and has been used in most student surveys conducted in the country for the last 22 years. The questionnaire gathers information on tobacco, alcohol, marijuana, inhalants, cocaine, crack, heroin, hallucinogens, and non-prescription use of amphetamines and other stimulants, tranquilizers, and sedatives. Tobacco and alcohol were not included in this report.

The field work was carried out by university students or recently licensed health and social science professionals. They received 18 hours of training that included selecting groups within chosen schools, presenting the task to students, and handling questions and nonresponses. They were told to provide instructions on completing the questionnaires; however, they were to direct students to address specific demands for additional information on the topic to their teachers. Field workers gathered these questions and handed them to the schools in an anonymous way. The questionnaires had written information on the nature of the study and asked for voluntary participation.

Students were asked not to write their names on the questionnaires, and the schools were identified with a code known only by the coordinator of the project.

Data from this study were compared with those obtained in the samples of 1989, 1991, and 1993 (De la Serna 1989; Medina-Mora 1991, 1993) at the same school level and based on the same core questions, sampling design, and procedures. The demographic characteristics from these samples are provided in exhibit 1. As indicated, there is a trend toward having younger students studying at the secondary and preparatory levels.

RESULTS

Of each 100 students, 11.5 percent have tried drugs other than tobacco and alcohol. However, only 4 percent have tried the substances on more than four occasions

Marijuana is the drug most often consumed (5 percent ever used and 3.2 percent used in the previous year), followed by cocaine (4.07 percent and 2.69 percent) and solvents (3.9 percent and 2.28 percent); hallucinogens were used by a small proportion of students (1.33 percent and 0.68 percent). Use of methamphetamine-type substances was reported by 0.9 percent of the sample, and crack cocaine use by 1.45 percent, mainly males (2.49 percent, compared with 0.49 percent for females).

Illegal use of prescription drugs ranged between 3.24 percent for tranquilizers and 1.58 percent for amphetamines. Tranquil-

izers have been used by more females (3.75 percent) than males (2.70 percent). The proportions of students who had ever used amphetamines were almost equal for both groups, with slightly higher rates among males (1.66 percent, compared with 1.51 percent among females).

Around half of those students who have tried drugs remain at the experimental level, reporting using the substances only once or twice, with proportions ranging from 46 percent of marijuana users to 54 percent of inhalant users. Prolonged use, defined as using the substance more than 50 times, ranged from 4 percent for hallucinogens to 9 percent in the case of heroin.

Use of substances increased with school grade: 7 percent of students in the Mexican equivalent to 8th grade in the

United States reported using drugs during the previous year; the proportion increased to 9 percent in 10th grade and 10 percent in 12th grade. Use of solvents decreased with advancing grade (6 percent, 5 percent, and 2 percent, respectively), while amphetamine use showed no difference (1 percent, 0.5 percent, and 1 percent); marijuana and cocaine use increased (2 percent, 5 percent, and 6 percent for marijuana; and 2 percent, 3 percent, and 5 percent for cocaine).

The proportion of marijuana and cocaine users increased above the confidence levels of the sample compared with 1993 rates, while inhalants remained constant with a downward trend (exhibit 2). The results from this study also report a major shift in the preferences of students: while inhalants had been the drug most often consumed since 1978, now they occupy second place; marijuana use, which had remained constant over the same period, has now risen; and cocaine use shows a major increase from 0.5 percent in 1976 to 1.66 percent in 1993 and 3.92 percent in 1997 (exhibit 3).

Gender plays a major role in the rates of use and preference for substances. The male-female ratio for drug use was 1-1.5; 14 percent and 9 percent, respectively, reported having experimented with drugs. In 1997, fewer males (2.9 percent) reported having used solvents in the year previous to the survey than in 1993 (3.7 percent) (exhibit 4). The respective 1993 and 1997 percentages were 2.2 percent and 4.68

percent for marijuana, and 1 percent and 4 percent for cocaine; the former, especially, showed major increases. Though fewer females reported ever using substances, the proportion of female users has increased considerably (exhibit 5). The proportion of solvent users almost doubled since 1993 (from 0.9 percent to 1.67 percent); marijuana use increased 6 times (0.3 percent to 1.82 percent), and cocaine use increased 7 times (0.2 percent to 1.4 percent). Among females, solvents were reported more often than cocaine.

During the 4-year period analyzed, an increasing number of students report past-month marijuana use (0.61 percent in 1989 and 1.27 percent in 1997) (exhibit 2). (The rate observed in 1989 is not included in the confidence intervals of the samples.) The same trend is observed for past-month use of inhalants, which rose from 0.04 percent in 1989 to 1.09 percent in 1997, and for past-month cocaine use, which rose from 0.22 percent in 1989 to 0.59 percent in 1993 and to 1.11 percent in 1997.

Exhibit 6 shows trends of actual past-month marijuana use by age. As seen, there is a trend toward more young people, age 14 or younger, reporting the use of this drug (0.8 percent in 1997 compared with 0.4 percent in 1993). Also, the last two surveys (1993 and 1997) show major increases from age 14 to 15, while in 1991 the increase is from age 15 to 16, and in 1989 from age 16 to 17. The pattern for cocaine is more uniform, with major increases observed from age 17 to 18 or older (exhibit 7).

CONCLUSIONS

Data presented in this report confirm observations from other surveys and from health and justice institution statistics about the trend toward increasing cocaine use. Among students, marijuana use is also on the rise, and the participation of females in the drug subculture is more important each time. Emerging substances such as methamphetamine and crack cocaine are also observed among this group.

One interesting finding is that the proportion of students who reported ever trying a drug, including medical drugs without a prescription, has not changed. What has varied is the type preference, with more participation of marijuana and cocaine. Perhaps the availability of these drugs only through the illegal market explains the public perception of an increase in the

problem of drug use within the student population.

Rates of use in Mexico are considerably lower than those reported in the Monitoring the Future Survey conducted among students in the United States (Johnston et al. 1998). The big difference is due to the higher rates of marijuana (39 percent among 12th graders in the United States compared with 6 percent in Mexico City) and amphetamine use (10 percent, and 1 percent, respectively), though the levels of cocaine use are almost equal in both groups.

These data call attention to a shifting and growing problem, stressing the need to modify the primary prevention approach to more specific and targeted interventions that consider the degree of risk among different subgroups of the population.

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**ADOLESCENTS OF MEXICO CITY
DEMOGRAPHIC CHARACTERISTICS OF HIGH SCHOOL STUDENTS
SAMPLED IN DRUG USE SURVEYS, BY PERCENTAGE
1989-97**

Characteristics	1989 N=3,600	1991 N=3,501	1993 N=10,879	1997 N=10,173
Gender				
Male	49.8	50.8	47.9	48.1
Female	50.1	48.9	50.3	51.9
Age				
≤ 14	44.9	60.0	55.5	70.5
15	20.6	11.8	14.0	15.9
16	13.8	9.8	10.6	12.1
17	9.4	8.5	9.3	9.1
18+	11.2	9.1	10.2	8.7
During the last year:				
Did not study	5.2	4.8	3.7	6.2
Studied half time	26.2	29.4	15.2	12.9
Studied full time	68.4	63.7	79.3	80.8
During the last year:				
Did not work	82.3	81.7	79.9	85.9
Worked half time	1.09	9.3	12.4	8.9
Worked full time	6.7	7.8	4.5	5.2

EXHIBIT 2

ADOLESCENTS OF MEXICO CITY
TRENDS IN THE USE OF ILLEGAL DRUGS, BY PERCENTAGE
1989-97

Drug/Use Pattern	1989		1991		1993		1997	
	Prevalence	Confidence Interval	Prevalence	Confidence Interval	Prevalence	Confidence Interval	Prevalence	Confidence Interval
Marijuana								
Ever used	3.39	1.09-4.51	2.80	1.09-4.51	3.58	2.70-4.45	4.98	4.19-5.78
Last year	1.52	0.32-2.25	1.29	0.32-2.25	1.30	0.77-1.81	3.20	2.25-4.14
Last month	0.61	0.00-1.76	0.83	0.00-1.76	1.17	0.27-2.06	1.27	0.58-1.96
Cocaine								
Ever used	1.26	0.07-1.99	1.03	0.07-1.99	1.66	1.03-2.29	4.07	2.81-5.33
Last year	0.47	0.00-1.07	0.37	0.00-1.07	0.63	0.11-1.13	2.69	1.77-3.61
Last month	0.22	0.00-0.64	0.17	0.00-0.64	0.59	0.22-0.95	1.11	0.54-1.68
Hallucinogens								
Ever used	0.79	0.00-2.30	1.00	0.00-2.30	0.82	0-1.63	1.33	0.64-2.01
Last year	0.25	0.00-1.20	0.40	0.00-1.20	0.25	0-0.53	0.68	0.34-1.01
Last month	0.18	0.00-0.41	0.06	0.00-0.41	0.23	0-0.59	0.29	0-0.68
Inhalants								
Ever used	4.62	3.09-6.91	5.00	3.09-6.91	5.01	3.97-6.04	3.90	2.80-5.01
Last year	1.98	1.27-3.53	2.40	1.27-3.53	2.34	2.08-2.59	2.28	1.49-3.07
Last month	0.04	0.00-2.15	1.06	0.00-2.15	1.05	0.54-1.55	1.09	0.64-1.54

EXHIBIT 3

ADOLESCENTS OF MEXICO CITY
TRENDS IN DRUG USE AMONG HIGH SCHOOL STUDENTS, BY PERCENTAGE
1976-97

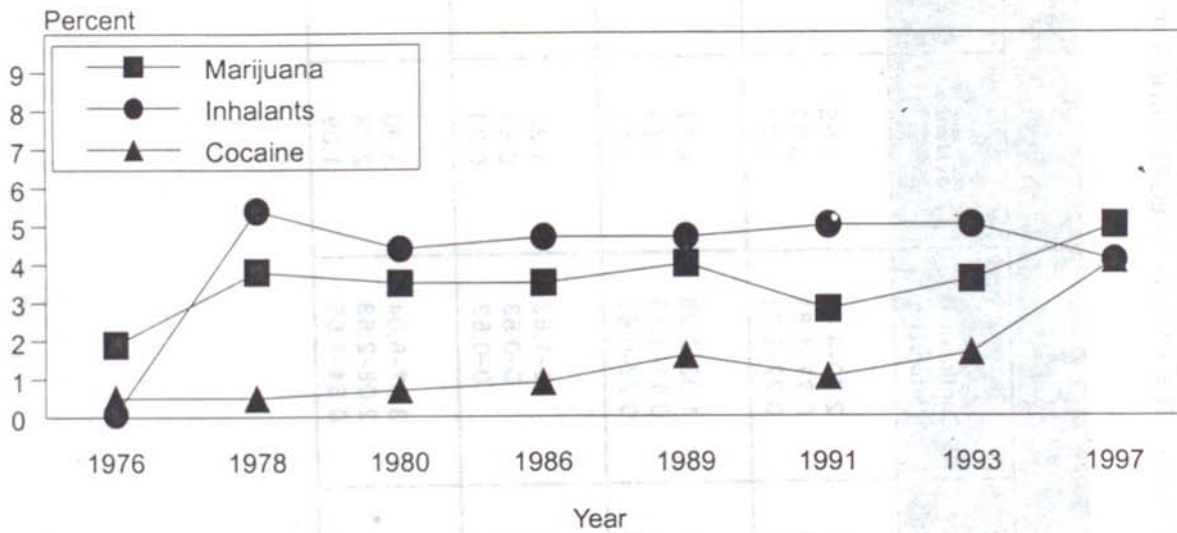


EXHIBIT 4

ADOLESCENTS OF MEXICO CITY
PAST-YEAR USE OF DRUGS
BY MALE HIGH SCHOOL STUDENTS, BY PERCENTAGE
1989-97

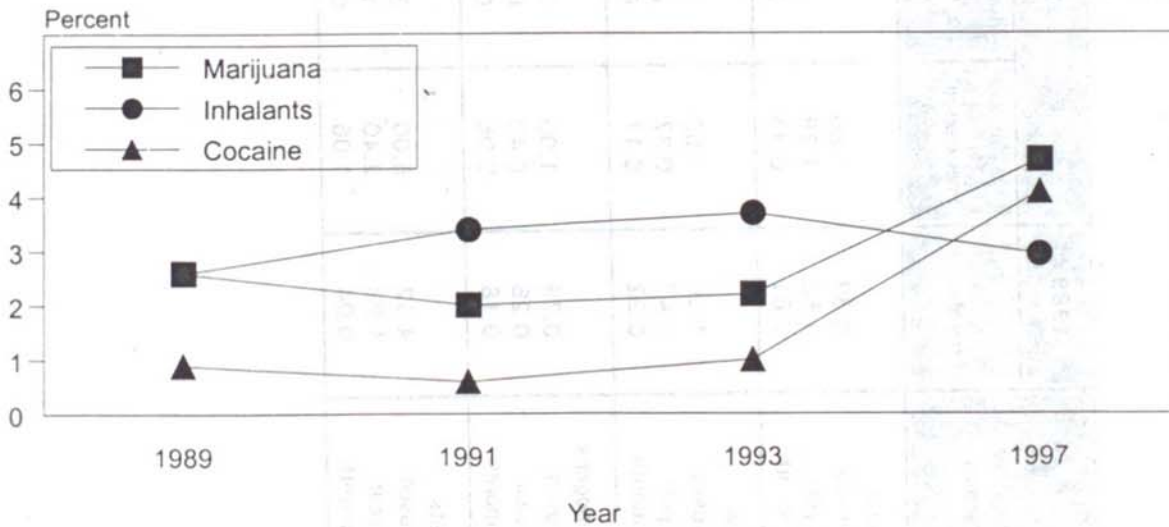


EXHIBIT 5

ADOLESCENTS OF MEXICO CITY
 PAST-YEAR USE OF DRUGS BY
 FEMALE HIGH SCHOOL STUDENTS, BY PERCENTAGE
 1989-97

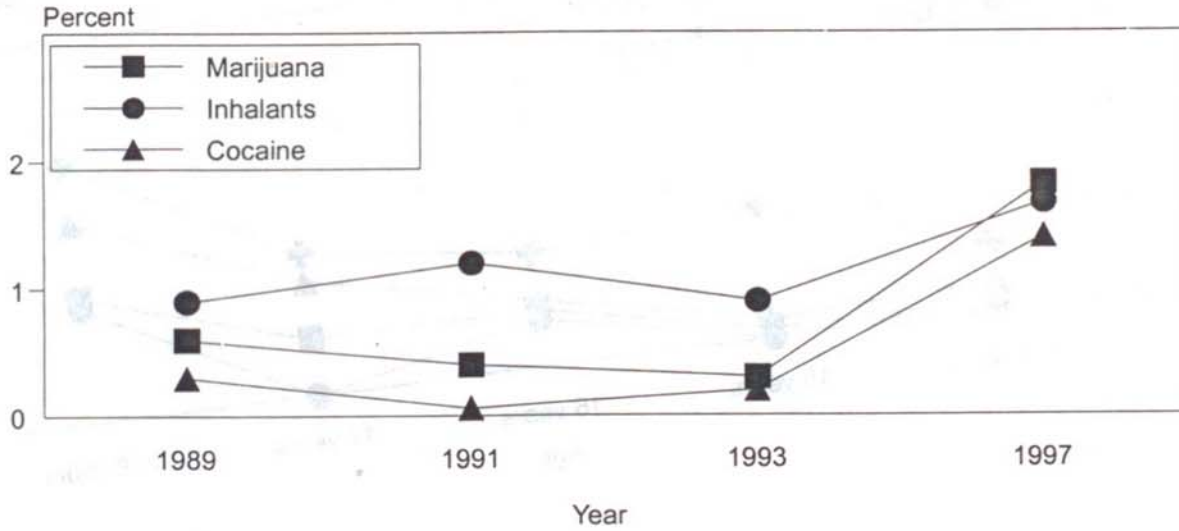


EXHIBIT 6

ADOLESCENTS OF MEXICO CITY
 PERCENTAGE OF MALE AND FEMALE HIGH SCHOOL STUDENTS
 REPORTING PAST-MONTH MARIJUANA USE, BY AGE
 1989-97

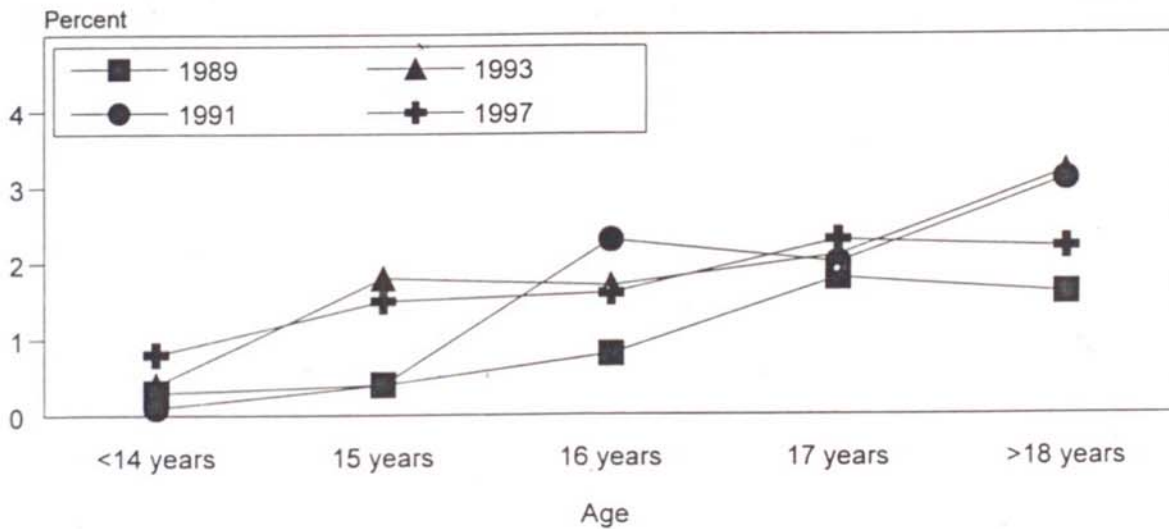


EXHIBIT 7

ADOLESCENTS OF MEXICO CITY
PERCENTAGE OF MALE AND FEMALE HIGH SCHOOL STUDENTS
REPORTING PAST-MONTH COCAINE USE, BY AGE
1989-97

