

# Consumption of Dependence-Producing Substances in Colombia<sup>1</sup>

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*A survey examining the use of six dependence-producing substances (alcohol, tobacco, tranquilizers, marijuana, coca paste or "basuca," and cocaine) was conducted in Colombia in 1987. The survey population consisted of 2,800 urban residents in four cities (Barranquilla, Bogotá, Cali, and Medellín) between the ages of 12 and 64. The results indicated that substantially more men than women were using all the substances involved except tranquilizers, that high proportions of study subjects used alcohol and tobacco, that 8.1% of the study subjects could be considered alcoholics, and that another 7.3% were at risk of becoming alcoholics. User prevalences of the three illegal substances (marijuana, basuca, and cocaine) were much lower, and the prevalence of marijuana users exceeded that of the other two drugs combined. However, 1% of the male study subjects reported using basuca within the past year. The high prevalence of basuca use has important public health implications, because the drug typically does great harm to its users within a short period of time.*

**A**lcoholism, smoking, and drug addiction have emerged in recent years as priority public health problems in Colombia. To date, several epidemiologic investigations of these matters have been conducted (1-11). The study described here had two main aims: first, to assess the situation regarding consumption of dependency-producing substances; and second, to explore some hypotheses about causal associations. It is expected that the results of the study will serve as a basis for orienting and evaluat-

ing prevention programs and also for informing decision-makers seeking to formulate policies in this delicate area.

## MATERIALS AND METHODS

The study, carried out in 1987, employed a representative sample (n=2,800) of urban residents between the ages of 12 and 64. (The 1985 Census recorded 12,641,741 such residents in Colombia.) It did not include institutional populations such as armed forces members, prisoners, or hospital inpatients; nor did it include transients or people without fixed domiciles.

The prevalence survey method was used. Descriptive analysis was supplemented by data on causal associations, measurement of the strength of these associations in terms of user prevalence differences, and calculation of these differences' degree of statistical significance.

With regard to place, the study sub-

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jects' degree of urbanization was examined in four metropolitan areas—those of Bogotá, Medellín, Cali, and Barranquilla. The sociodemographic variables studied were the subjects' age, sex, marital status, amount of schooling, employment status, and people with whom they shared their homes.

Time parameters were used to define several indicators of consumption. These indicators included the prevalence of consumption in the last year (equal to the total number of users during this period divided by the total population studied, multiplied by 1,000); the index of former use (equal to the total number of people who had used the drug in question at least once in their lives and who at the time of the survey had completed more than one year of abstinence, divided by the total population studied, multiplied by 1,000); and lifetime prevalence, also called the global index (the total number of current and former users divided by the total population studied, multiplied by 1,000).

In addition, the number of years and months of use were recorded, and these time variables were used to calculate the incidence of consumption (considering new consumers to be those using drugs 11 months or less) and also the prevalence of consumption within the last 30 days.

Both the sample selection and data collection were handled by professionals in these fields. Initially, several instruments used in the United States were examined (12), together with others used for previous research in Medellín (4–8) and ones being currently applied at clinical settings in Colombia (13–17). Proceeding from the models provided by these documents, the instrument employed to collect data in the present study was prepared by the authors. This precoded instrument included the CAGE questionnaire for the diagnosis of alcoholism (14, 18–21) and

the self-administered Zung scale for assessing clinical depression (17, 18, 22–24).

The instrument was administered to the respondents in two stages. During the first (interview) stage, the person making the survey asked the study subject a list of general questions on the use of tranquilizers and tobacco. Then, during the second (questionnaire) stage, the subject provided anonymous written answers to questions of a more personal nature on the use of socially or legally unacceptable substances, with assistance from the interviewer. In order to minimize distortion of the information being provided, the "secret ballot" method was employed.

The validity of responses to self-administered questionnaires has been widely recognized, a state of affairs that was reinforced in this study by the explanations that the interviewers provided to the survey subjects.

## RESULTS

### Sex-Specific User Prevalences

Higher percentages of men than women made use of all the substances listed except tranquilizers (Table 1), and the observed differences between the

**Table 1.** Study subjects reporting use of one or more of the six substances investigated within the last year, by sex; Colombia, 1987.

Substance	User prevalences per 1,000 subjects, by sex		
	Men	Women	Total
Alcohol	705	416	560
Tobacco	373	222	297
Tranquilizers	46	74	60
Marijuana	19	3	11
Basuca	10	3	6
Cocaine	4	1	3

male and female prevalences involved was generally quite significant.

The substance used by the largest numbers of study subjects of both sexes was alcohol. Overall, 56% (560 per thousand) of all the study subjects reported using alcoholic beverages within the last year. Tobacco ranked second, with 30% reporting use of tobacco products within the past year.

Tranquilizers, which like alcohol and tobacco are socially accepted, ranked third in terms of user prevalence. However, as many investigations done in other countries have also found, the bulk of the users were women (7.4% of the female study subjects versus 4.6% of the males).

Regarding the percentage of marijuana users, this exceeded the percentages of those using each of the other substances considered illegal. Specifically, 1.9% of the male study subjects and 0.3% of the females reported using marijuana within the past year. The difference between these figures indicates that a strong association exists between the male sex and use of this substance.

Basuca (coca paste) use within the last year was reported by 1% of the male study subjects and 0.3% of the females—indicating a preponderance of male users. In recent years this drug has tended to displace other forms of cocaine, and the user prevalence data shown in Table 1 suggest that basuca users among the

study subjects outnumbered cocaine users two to one.

### Age-Specific User Prevalences

Although noteworthy numbers of alcohol and tobacco users appeared in the youngest (12–15) age group studied, Table 2 shows very sharp user prevalence increases in the next (16–19) age group. These prevalences then level off among older age groups in the case of alcohol use, while continuing toward a peak in the 25–29 year group in the case of tobacco.

Regarding tranquilizers, although noteworthy numbers of users appeared in the youngest age group, the one-year user prevalence rose consistently with age—reaching its maximum of 112 users per 1,000 study subjects in the oldest (50–64) age group. The user prevalence found in the youngest age group is in agreement with the results of other studies conducted among secondary students in Colombia (1, 2, 5, 6, 10, 25, 26).

Marijuana was the most commonly used of the illegal substances studied. Marijuana user prevalences by age (see Table 2) were found to follow a fairly symmetrical curve among our study subjects. Peak prevalences (25 and 20 per thousand) of those using marijuana within the past year occurred in the 20–24 and 25–29 age groups; lesser prevalences were registered by the 16–19 and 30–37

**Table 2.** Study subjects reporting use of one or more of the six substances investigated within the last year, by age group; Colombia, 1987.

Substance	User prevalence per 1,000 subjects, by age group (in years)						
	12–15	16–19	20–24	25–29	30–37	38–49	50–64
Alcohol	291	688	693	697	653	549	431
Tobacco	46	249	362	428	394	337	266
Tranquilizers	23	45	55	60	63	75	112
Marijuana	5	12	25	20	15	5	0
Basuca	0	12	13	8	10	3	0
Cocaine	0	2	5	5	5	0	0

age groups; and very low or zero prevalences were found in the youngest (12–15) and oldest (38–49 and 50–64) groups.

Among males, the highest prevalence of those who reported using marijuana within the last year (5%) was found in the 20–24 year age group, while among females this highest prevalence (1%) was found in the 16–19 year group.

The lifetime prevalence of marijuana users (the proportion who said they had used marijuana sometime in their lives) was highest among males in the 25–29 and 30–37 groups, where it was 17.6%. Among females, the highest lifetime prevalence (7.5%) was found in the 25–29 group.

No basuca users were found in the youngest (12–15) age group, but a near-peak one-year user prevalence (12 per thousand) was found in the 16–19 group. This prevalence is very high in terms of public health impact, because basuca does great harm to its users and has a short latency period. Comparable prevalences ranging from 13 to 8 per thousand were found in the 20–24, 25–29, and 30–37 age groups (see Table 2), with substantially lower (3 per thousand and zero) prevalences occurring in the 38–49 and 50–64 groups, respectively. It should be noted, however, that the indicators of former use showed very different previous behavior.

Among males, the 20–24 group appeared to be at greatest risk, the user prevalence in this age range being 25 per thousand. Among females, the highest user prevalence occurred in the 16–19 group, where it was 10 per thousand.

Cocaine use within the last year was reported in only four of the seven age groups studied, the user prevalences in these groups being 2 per thousand in the 16–19 age group and 5 per thousand in the 20–24, 25–29, and 30–37 groups. The age group with the highest prevalences of lifetime (current plus former) cocaine

users of both sexes was the 25–29 group, where the prevalence of male lifetime users was 7.5% and the prevalence of female lifetime users was 2.5%. Displacement of the 30–37 age group in this case may be attributable to exposure of the two cohorts to different substances.

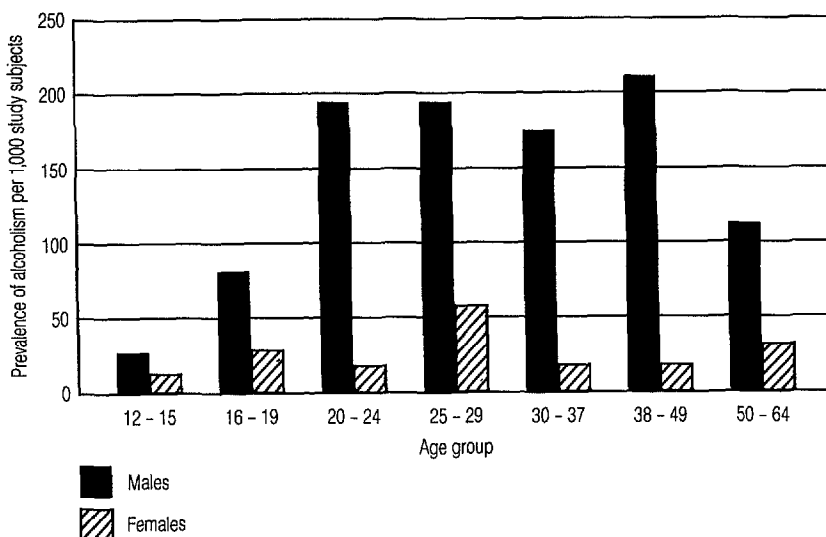
## Alcoholism

The CAGE questionnaire was used to evaluate alcoholism. This instrument contains only four questions, and an overall score is obtained by totaling the positive responses (18–21). Subjects responding positively to zero or one question are classified as “normal,” to two questions are classified as being at high risk of alcoholism, and to three or four are classified as “alcoholic.”

As previously noted, 56% of the study population was found to have used alcoholic beverages within the last year. Responses to the CAGE questionnaire indicated that 7.3% of the total study population was at high risk of alcoholism and another 8.1% was classified as alcoholic.

As can be seen in Figure 1 and Table 3, the problem of alcoholism among males was found to be pronounced in the 20–24 and older age groups, although some alcoholics were found in the 16–19 and even the 12–15 groups. Although the prevalence of male alcoholics was highest in the 38–49 year group, rates nearly as high were registered in the 20–24, 25–29, and 30–37 age ranges. However, the prevalence of alcoholics in the 50–64 year group was substantially lower, presumably in part as a result of alcohol-related deaths due to accidents, violence, or other causes.

A very different pattern was found among female study subjects, with those classed as alcoholics being most prevalent in the 25–29 year group. It should be noted that women in this age range had



**Figure 1.** Rates of alcoholism among the study subjects by age group and sex, as indicated by their responses to the CAGE questionnaire; Colombia, 1987.

the highest degree of participation in the job market, and also that an association was found between alcoholism and working outside the home—the prevalence of alcoholics among those working outside the home being twice that found among the housewives.

It is probable that in the future the age-specific curve for alcoholism will begin to shift, since the 16–19 group seems to be at high risk for its age, and displacement of older cohorts appears likely.

Comparing prevalences of alcohol users with the prevalences of alcoholics indicated by the CAGE questionnaire results shows that the highest prevalence of male alcoholics emerged in the 38–49 year group, which did not have the highest prevalence of users. In the case of women, however, the highest prevalences of users and alcoholics occurred in the 25–29 year group, which also coincided with peak employment (see Table 3).

It should be emphasized that serious problems of early alcoholism were found in both sexes. Indeed, the CAGE results indicated that a large percentage of the

16–19 group was at high risk of becoming alcoholic. These data agree with observations of clinicians, who have been reporting that the age curve of patients treated for alcoholism is getting younger (27).

The foregoing data can be supplemented by findings from the 1980 National Health Survey conducted by Colombia's Ministry of Health, which classified people over 15 years of age as alcoholics if they consumed liquor more than three days a week or consumed more than one bottle of liquor (equivalent to a one-quart whiskey bottle) one to three days a week (28, 29).

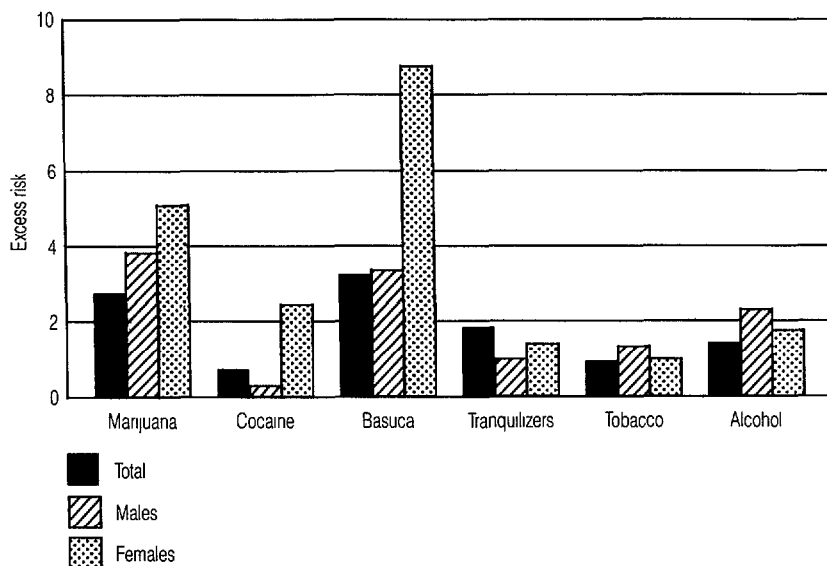
### Other Findings

Regarding marital status, the prevalence of those using alcohol, marijuana, basuca, or other forms of cocaine was 0.53% higher among males in consensual unions than among those who were married. With respect to females, the highest prevalences of those using these drugs were found among single women.

Comparing employed with unem-

**Table 3.** A comparison between the prevalence of study subjects using alcohol within the last year and the prevalence of alcoholics as indicated by responses to the CAGE questionnaire, by age group and sex; Colombia, 1987.

Indicator	User prevalences per 1,000 subjects, by age group and sex (M = males, F = females)													
	12-15		16-19		20-24		25-29		30-37		38-49		50-64	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Prevalence of alcohol consumption	317	266	767	448	846	538	824	570	825	480	758	343	597	265
Prevalence of subjects at risk of alcoholism	60	5	139	20	144	40	131	25	171	40	121	20	85	15
Prevalence of alcoholism	25	10	79	25	189	15	191	55	171	15	207	15	109	30



**Figure 2.** Excess risk of attempted suicide among drug users in the study population, by sex and type of drug involved; Colombia, 1987.

ployed groups, the unemployed were found to exhibit higher user prevalences of all the substances studied. Among study subjects living in shantytowns, females were found to be at relatively greater risk of becoming marijuana or basuca users than females living in other areas. In general, basuca users tended to be concentrated among members of the lower socioeconomic strata. In the upper socioeconomic classes the highest frequencies of cocaine and marijuana use were recorded among males.

In addition, a statistically significant association ( $p < 0.01$ ) was found between attempted suicide and drug use among members of the study population between 15 and 54 years of age. As Figure 2 shows, the risk of suicide was found to increase most markedly among basuca and marijuana users, especially when these users were women.

Table 4 shows user incidence and prevalence patterns, by sex, of the various substances investigated. Of the three ille-

gal drugs, marijuana was found to have the highest one-year user incidence, 30-day user prevalence, one-year user prevalence, former consumer prevalence, and period prevalence. These data contrast with those from previous studies (2-4, 7) indicating that the one-year incidence of basuca use exceeded the one-year incidence of marijuana use. The difference in these incidence data may be the result of a mass campaign directed against basuca.

Regarding marijuana, basuca, and cocaine, the 30-day user prevalences of these substances appear virtually identical to the one-year user prevalences—perhaps largely as a result of their great addictive power.

Overall, the use of the substances studied clearly poses serious health problems for Colombia—especially in view of the negative implications for the country's present and future development, which will require the participation of young people at substantial risk of becoming dependent on these drugs.

**Table 4.** Indicators of consumption per 1,000 subjects (one-year user incidence, 30-day user prevalence, one-year user prevalence, former user prevalence, and lifetime prevalence) of five of the dependence-producing substances investigated, by sex (M = males, F = females, T = total); Colombia, 1987.

Substance	One-year incidence			30-day prevalence			One-year prevalence			Ex-consumer prevalence			Lifetime prevalence		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Alcohol	27	45	36	600	259	430	705	416	560	119	102	110	824	518	671
Tranquilizers	19	32	25	39	69	54	46	74	60	63	103	83	109	177	143
Marijuana	4	2	3	19	3	11	19	3	11	84	25	55	103	28	65
Basuca	2	1	1	10	2	6	10	3	6	51	11	31	61	14	37
Cocaine	2	0	1	4	1	2	4	1	3	29	9	19	33	10	21



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