

MANIFESTATIONS OF ALCOHOL-RELATED PROBLEMS IN LATIN AMERICA: A REVIEW¹

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The presently available literature on drinking patterns and alcohol-related problems in Latin America is fragmented and incomplete. The work presented here reviews that literature and suggests the measures needed to obtain a reasonably coherent overview of the existing situation.

Introduction

The purpose of this article is to review the epidemiologic literature on alcohol consumption in Latin American countries. The first section deals with data that indicate alcohol problems—specifically, data on alcohol-related mortality, traffic accidents, suicides, crime, and psychiatric problems. The second section provides an overview of surveys in 13 countries dealing with drinking patterns and alcoholism. The final section presents a number of conclusions and suggestions for future research.

Alcohol-Related Indicators

Alcohol-Related Mortality

From 1962 to 1964 the Pan American Health Organization (PAHO) conducted a study of urban mortality patterns in 10 cities of Latin America, in Bristol, England, and in San Fran-

cisco, U.S.A. In each of the cities a systematic sampling procedure was used to select 2,000 deaths from among all the deaths of people 15 to 74 years of age. The families and physicians of the deceased were interviewed by local collaborating researchers, and the resulting data were sent to a central office where the cause of death was diagnosed by means of standardized procedures.

The investigation showed that alcohol-related deaths (cirrhosis, alcoholic psychosis, and alcoholism) accounted for 4.9% of all the deaths included in the study. However, as indicated in Table 1, the study found a wide disparity between alcohol-related mortality in males and females and also very significant differences in different cities. For example, the death rate from alcoholic psychosis and alcoholism among males was found to be six times higher in Guatemala City and over twice as high in Santiago, Chile, than it was in San Francisco.³ Among females, however, San Francisco showed the highest alcohol-related mortality (from psychoses and alcoholism as well as from alcoholic cirrhosis of the liver). Female mortality from these alcohol-related cases was also high in Santiago and Mexico City. The lowest mortality (among both males and females) was found in Bristol, England.

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³In this context, it is noteworthy that studies of cirrhosis mortality in U.S. cities have generally found San Francisco to have the highest rate. However, this finding appears to be influenced in part by the city's restricted boundaries as well as by its highly professional death certification procedures.

Table 1. Annual age-adjusted death rates from alcoholic cirrhosis of the liver and from alcoholic psychoses and alcoholism per 100,000 inhabitants 15-74 years of age, by sex, in 10 Latin American cities, San Francisco (U.S.A.), and Bristol (England) in 1962-1964.

City	Alcoholic psychoses and alcoholism		Alcoholic cirrhosis		Total	
	Males	Females	Males	Females	Males	Females
Bogotá, Colombia	1.8	0.7	11.2	2.2	13.0	2.9
Cali, Colombia	4.1	0.6	8.9	0.3	13.0	0.9
Caracas, Venezuela	3.0	0.5	13.1	0.7	16.1	1.2
Guatemala City, Guatemala	52.9	2.9	26.9	4.6	79.8	7.5
La Plata, Argentina	7.4	1.1	20.6	3.0	28.0	4.1
Lima, Peru	6.1	0.5	8.0	0.7	14.1	1.2
Mexico City, Mexico	14.4	1.6	102.5	31.1	116.8	32.7
Ribeirão Preto, Brazil	7.7	3.8	13.1	1.8	20.8	5.7
Santiago, Chile	21.6	1.6	143.0	38.4	164.5	40.0
São Paulo, Brazil	12.2	1.7	17.6	2.0	29.8	3.7
San Francisco, U.S.A.	8.4	5.1	71.3	43.4	79.7	48.5
Bristol, England	0.2	0.0	1.2	0.3	1.4	0.3

Source: R. R. Puffer and G. W. Griffith (*1*).

When broken down by age, the data on male subjects dying of alcoholism or alcoholic psychoses followed a similar pattern in all the cities studied. That is, there was an increase from 15 years of age to around 54 years of age, followed by a leveling off or decline thereafter. The death rate for alcoholic cirrhosis among both men and women also increased with age, generally reaching about its highest level in the 55-64 age group. Overall, combined data from all the study cities indicated that males in the 55-64 year age group had an alcohol-related cirrhosis mortality of about 100 deaths per 100,000—over a hundred times greater than that of males 15-24 years old and some 10 times greater than that of males 25-34 years old. These differences result both from the chronic nature of liver cirrhosis and from its typical development in middle age.

Alcohol-Related Admissions to Mental Hospitals

Another common indicator of alcohol-related problems is the proportion of persons treated for alcoholism and associated diagnoses in psychiatric facilities. A principal limitation of this indicator—as well as other indicators—is the fact

that it is influenced by the particular organization of medical care in each country involved.

Data on alcohol-related admissions to psychiatric hospitals in a number of countries in the Americas are presented in Table 2. As may be seen, alcohol-related disorders appear to place varying burdens on the psychiatric systems of these countries, accounting for anywhere from 36% of all admissions in Santiago, Chile, to roughly 4% of all admissions in Venezuela.

Alcohol-Related Traffic Accidents, Crimes, Arrests, and Suicides in Selected Countries

Data on alcohol-related traffic accidents, crimes, arrests, and suicides are more difficult to assess than data on alcohol-related disease mortality or admissions to psychiatric hospitals, because they are less complete and more variable. Regarding completeness, most of the literature on alcohol-related legal offenses is now more than 20 years old, dealing mainly with conditions prevailing in the 1950s and 1960s.

Regarding variability, different countries have very different procedures for dealing with alcohol-related problems that involve possible law enforcement, as well as different enforce-

Table 2. Alcohol-related admissions to mental hospitals in nine countries of the Americas.

Country	% of all psychiatric hospital admissions for the country, city, or program specified	Source of data
Argentina	8.3% of admissions to the psychiatric facility in Lanús, Argentina	Sluzki, 1966 (2)
Brazil	4.5% of all female first admissions and 28% of all male first admissions in 1974 (19% for both sexes)	Caetano, 1981 (3)
Chile	36% of all admissions to psychiatric hospitals in Santiago, Chile	Marconi, 1967 (4)
Colombia	15% of the admissions to psychiatric services of general hospitals	Ministerio de Salud, 1977 (5)
Costa Rica	32% of all admissions	Morales and Chassoul in Moser, 1980 (6)
Mexico	20% of the adult patients admitted to psychiatric hospitals through the national welfare and social security institute	Toro-Pérez, 1973 (7)
Peru	4% to 13% of the admissions to psychiatric services	Almeida, 1969 (8)
Puerto Rico	16.5% of the admissions to a psychiatric hospital (1971)	Aviller-Roig, 1974 (9)
Venezuela	3.5 to 5.4% of all admissions	Ordoñez in Moser, 1980 (6)

ment practices; and virtually every police officer has immense discretionary powers concerning when and how to enforce the law.

Overall, however, it is clear that these alcohol-related problems are quite common. González and Katatsky (10) reported in 1978 that there was an apparent lack of concern about alcohol-related traffic accidents in Latin America, as well as about traffic safety in general. Examination of previous reviews by Negrete (11, 12) and Saavedra and Mariátegui (13) led these authors to conclude that alcohol was highly associated with traffic accidents and other legal problems in Latin America. A more recent PAHO assessment (14) indicated that between 25% and 60% of all traffic accidents in Latin America were caused by drunk drivers. And, regarding arrests for public drunkenness, a review of data from six Latin American countries by Marconi and Adis Castro in 1967 (15) indicated that such arrests accounted for between 40% and 58% of all arrests in those countries.⁴

⁴Chile, Costa Rica, El Salvador, Honduras, Nicaragua, and Peru.

Fragmentary data available for Argentina, Chile, Costa Rica, Guatemala, Mexico, Puerto Rico, and Venezuela can be summarized as follows:

In Argentina, the percentage of homicides associated with alcohol ingestion between 1960 and 1965 varied from 2% to 10%, accounting for over 5% of all homicides in five of the six years (16). In 1961, according to Calderón Nervaes, 67% of the people arrested in shantytowns were classed as "alcoholics" (13). More recently, Negrete (12) reported in 1976 that 28% of those arrested for "crimes against persons" admitted having been under the influence of alcohol when the crime was committed; and Mardones (17) reported in 1980 that 20% of the Buenos Aires drivers given an "alcohol test" were found to have blood alcohol levels considered "dangerous."

In Chile, data from the Institute of Legal Medicine of Santiago cited by Marconi (18) indicate that 25% of those who committed suicide in 1965 had positive blood alcohol levels. The same author also cites Chilean police data indicating that 52% of all crimes against persons

were committed under the influence of alcohol. Regarding traffic accidents, Vargas (cited by Moser, 19, in 1974) reported that 70% of the males involved in traffic accidents had positive "alcoholemia." In this same vein, Viel et al. (20) reported data from a sample of 1,662 autopsies performed during the period of 1960-1964 at the Institute of Legal Medicine in Santiago. Within this sample, 41% of the 865 males and 6% of the 78 females dying in traffic accidents had alcoholemias above 0.10%. In all, 41% of the males and 5% of the females in this sample were classified as heavy drinkers.

In Costa Rica, Morales and Chassoul (cited by Moser, 6) reported that the rate of road accidents connected with alcohol in the total population rose from 17 per 100,000 inhabitants in 1961 to 26 per 100,000 in 1965. Also, according to Adis Castro and Flores (21), nearly three-quarters of all 1965 arrests (9,166 of 12,370 arrests) were for drunkenness; and according to the National Institute on Alcoholism (cited in Moser, 6), 59% of all arrests (20,557 of 34,945) were for drunkenness in 1977.

In Guatemala, a 1973 work by Rivera-Lima (22) indicates that only 9% of the traffic accidents occurring between 1967 and 1971 were reported as being related to alcohol ingestion. However, the same work indicates that 66% of all arrests in the country during 1962-1963 were for drunkenness.

In Mexico, de la Fuente and Campillo-Serrano (23) found that a relatively small share (4%) of the reported causes of suicide in 1967 were associated with alcohol ingestion. However, a more recent study by the Mexican Institute of Psychiatry—dealing with 266 cases of suicide that occurred in 1979 and were examined by the Forensic Medical Service—found that nearly a third of all the victims had positive levels of alcohol in their blood (24). Cabildo (cited in the 1978 report by de la Fuente and Campillo-Serrano, 23) indicated that alcohol was involved in 51% of violence-related injuries. Regarding traffic accidents, Silva Martínez (25) reported in 1972 that alcohol was involved in only 7% of such accidents nationwide, with the percentages for specific states ranging from a low of 2.3%

Table 3. Percentages of legal problems associated with alcohol consumption in selected countries of the Americas.

Country	Year	Problem	% alcohol-related
Argentina	1960-1965	homicides	2-10%
	1961	problems resulting in arrests in shantytowns	67%
	1980	driving with "dangerous" levels of blood alcohol (positive blood alcohol content—BAC) in Buenos Aires	20% of drivers tested
Chile	1965	crimes against persons	52%
	1965	suicides	25%
	1970	male traffic fatalities with positive BACs	46%
	1974	male drivers with significant blood alcohol levels	70%
Costa Rica	1965	arrests for public drunkenness	74% of all arrests
	1977	arrests for public drunkenness	59% of all arrests
Guatemala	1967-1972	traffic accidents	9%
		problems resulting in arrest	66%
Mexico	1972	traffic accidents nationwide	7%
	1974	traffic accidents in Mexico City	17%
	1981	suicides (with positive BACs)	30%
Puerto Rico	1968-1972	traffic fatalities	45-63%
Venezuela	1961-1964	traffic accidents	50%

in Vera Cruz to a high of 19% in Baja California. An earlier (1967) report by Calderón and Cabildo (26) referred to a national rate of 7%. However, a 1975 report by Navarro (27) indicated that the proportion of alcohol-related traffic accidents in Mexico City was somewhat higher (on the order of 17%) in 1974.

In Puerto Rico, the association between alcohol and traffic accidents has been analyzed by Kaye (28). His data indicate that in the years from 1968 through 1972 alcohol was involved in a large share (46 to 63%) of all traffic fatalities on the island. He also reports that an analysis of 508 traffic fatalities occurring in 1973 found alcohol present in the blood of 44% of 386 deceased subjects examined. (The remaining 122 subjects were not examined, either because the deceased was under 15 years of age or because more than five hours had elapsed between the accident and death.) Of the deceased subjects with blood alcohol, 40% had been drivers, 30% pedestrians, and 25% passengers (the status of 5% is unclear).

In Venezuela, Boada (29) reported in 1976 that alcohol was involved in at least 50% of all traffic accidents occurring in the period between 1961 and 1964.

Selected findings from the literature reviewed above are shown in Table 3.

Community Studies of Drinking Patterns and Alcoholism

Before proceeding to a country-by-country review of investigations into drinking patterns, it would appear worthwhile to examine Marconi's operational definitions of different types of drinkers—definitions that have been used by surveys in various Latin American countries. These definitions, discussed by Marconi in several publications (4, 30, 31), are essentially as follows:

Alcoholics are identified by their "inability to abstain" or "inability to stop" ("loss of control" in Jellinek's terminology). Abstainers are defined as people who have never drunk alcoholic beverages or who have drunk little (less than 100 cc of absolute alcohol) on fewer than five

days in the year preceding the survey.⁵ Moderate drinkers are defined as people who may drink fairly often, but whose regular intake does not exceed 100 cc of absolute alcohol per day and who experience less than 12 episodes of drunkenness per year (31). Excessive drinkers are defined as people who drink habitually (more than three days a week) and who commonly consume over 100 cc of absolute alcohol per day or who experience 12 or more episodes of drunkenness per year. (The limit of 100 cc of absolute alcohol was established arbitrarily by Marconi on the presumption that moderate drinkers should not derive over 20% of their total daily caloric intake from alcohol. And since each gram of alcohol generates some 7.1 calories, an intake of 100 cc (80 grams) will provide 600 calories, or 20% of an average diet of 3,000 calories per day.)

Argentina

A group of researchers working in Buenos Aires has produced one of the only surveys of attitudes toward drinking in the general population (32), as well as what is probably the best-described survey of "alcoholism and excessive drinking" in Latin America (33).

The survey of attitudes toward drinking (32), published in 1968, compared two groups of respondents: a sample of individuals from the city of Buenos Aires proper and a sample from the district of Lanús, an industrial suburb of Buenos Aires. The results showed that 74% of the sample families drank wine with their meals. Fifty-one per cent of the Lanús subjects and 71% of the Buenos Aires subjects regarded "under 12 years of age" to be an acceptable time for people to begin drinking. However, 90% of the Lanús subjects expressed concern about alcohol's harmful effects, as compared to only 30% of the Buenos Aires subjects. A majority of the respondents in both samples (75% in Lanús and

⁵One hundred cubic centimeters of absolute alcohol is roughly equivalent to nine drinks, each of which has 9 grams of absolute alcohol and corresponds to a 1/2 pint of beer (4%), or a 4 oz. glass of wine (10%), or a 1 oz. shot of spirits (40%).

57% in Buenos Aires) considered alcoholism a vice.

When the samples were classified by social strata (how this classification was accomplished is not explained by the authors), the lowest social stratum showed more permissiveness toward alcohol use but greater support for "punitive" solutions against alcoholism (prohibition of sales, fines punishing alcoholics). In contrast, the stratum defined as "middle class" tended to support medical and social solutions such as treatment of alcoholics, education, and improvement of socioeconomic conditions.

The survey also found that 82% of the subjects regarded a daily intake of a quarter-liter of wine (approximately half a pint) as acceptable, while 44% said they regarded a daily intake of over half a liter (approximately a pint) as acceptable. According to the survey, 21% of the subjects had an actual daily intake averaging between a quarter-liter and half-liter, while 58% had an average daily intake exceeding a half-liter.

The aforementioned survey of alcoholism and excessive drinking, described in a 1975 publication by Tarnopolsky et al. (33), found the average daily wine intake of males in Lanús to be half a liter and that of females to be a tenth of a liter. However, these values were found to be strongly class-related. That is, the survey found average wine consumption in a slum area to be high (on the order of one liter per day), while average consumption in the best residential areas was considerably lower (on the order of 0.3 liters per day).

Using Marconi's criteria for defining various types of drinkers (31), and employing physicians and residents in psychiatry as interviewers, this survey found the prevalence of alcoholics in the male population to be $4.4 \pm 2\%$ and the prevalence of excessive drinkers in the male population to be $12 \pm 3.4\%$. No female alcoholics were found, and the observed prevalence of excessive drinkers in the female population was only 1%. Most of the female subjects (76%) were found to be moderate drinkers, and 22% were found to be nondrinkers.

Overall, abstention in Lanús was found to have a U-shaped relationship with age, being

more prevalent among young subjects (15-24 years of age) and older subjects (over 54 years of age). Specifically, 23% of the 15-24 group and some 16% of those over 54 appeared to be nondrinkers. As might therefore be expected, alcoholics and excessive drinkers were concentrated in the 25-54 age group. In contrast, moderate drinking showed relatively little variation by age, with roughly 70% of the survey subjects being included in this category.

Also, drinking was found to be negatively associated with education, occupation, and degree of urbanization of the subject's area of residence, this latter association being the most marked detected by the survey. If this association is broken down by drinking category, it can be seen that the association involves primarily alcoholics and excessive drinkers. That is, while male subjects in the wealthier (more urbanized) area were found to include some alcoholics (0.6%) and excessive drinkers (7.5%), 13% of the male subjects in the poorer (less urbanized) area were classed as alcoholics and 20% as excessive drinkers.

A later (1977) report by the same group (35) found that migrants to Lanús from rural areas of Argentina included a significantly higher proportion of "pathologic drinkers" (excessive drinkers plus alcoholics) than did the group of subjects born in the province of Buenos Aires. However, the rates of alcoholism and excessive drinking among native-born Argentinians (subjects born either in Buenos Aires or other provinces) were not found to differ significantly from the rates found among subjects who were foreign-born.

Another survey, published by Grimson et al. in 1972 (36), assessed the prevalence of alcoholism and excessive drinking, as well as other psychiatric problems, in a random sample of 3,357 Buenos Aires residents. This survey used modified (more inclusive) versions of Marconi's definitions of "excessive drinkers" and "alcoholics" and, in congruence with the change in definitions, it found higher percentages of excessive drinkers and alcoholics (16% and 6.7%, respectively) than those found by Tarnopolsky et al. (33), the latter authors reporting that 6.4%

of their Lanús subjects were excessive drinkers and 1.9% were alcoholics. The percentage of moderate drinkers reported by Grimson et al. (61%) is somewhat lower than that reported by Tarnopolsky et al. (73%), but the percentage of nondrinkers (15%) is similar to the 16% reported by the latter group.

Other results reported by the Grimson group are similar to those obtained by other surveys in Latin America. That is, excessive drinkers and alcoholics were found to be concentrated in the 22-39 age group; the prevalence of alcoholism among males (13%) was found to be much higher than the prevalence among females (2%); and the percentage of nondrinking males (9%) was smaller than the percentage of nondrinking females (20%). In addition, alcoholics and excessive drinkers were observed to be concentrated within the lower socioeconomic strata. Specifically, by comparing the distribution of different types of drinkers among slum-dwellers and residents of urbanized areas, Grimson et al. found the rate of alcoholism to be four times higher in the slums (21% versus 6%). Interestingly, the slums were also found to have a slightly higher percentage of nondrinkers (19% versus 15%), fewer moderate drinkers (49% versus 63%), and fewer excessive drinkers (12% versus 17%).

Bolivia

The most significant research on alcohol consumption to come out of Bolivia is reported in Heath's studies of the Camba (37), published in 1958, and the Camba and Aymara (38), published in 1971. The Camba drink alcohol during festivities. Their beverage is a potent distilled spirit that burns the mouth and throat and is called simply "alcohol"—with reason, since it is 89% ethyl alcohol. The Camba attribute some medicinal properties to this drink, claiming, for example, that "it kills parasites." According to Heath's analysis, drinking among the Camba usually leads to intoxication but never to aggression or solitary drinking. Because they tend to live alone, work alone, and have few opportunities for socialization, drinking among the

Camba may have an important integrative function, helping with the formation of groups where intense social interaction occurs.

Heath's 1971 description of drinking in Montero (a town populated by the Camba) and Coroico (inhabited by the Aymara) provide testimony about the relationship between drinking patterns and social structure. In 1952, Bolivia witnessed a political upheaval that significantly changed the country's political and social structure. In Montero, many peasants left the farms to establish themselves on their own land; as a result the previously friendly relationship with the landowners was broken. In Coroico, however, the landowners tended to adopt the role of merchants serving as middlemen between former peasants and wholesalers in La Paz. The subsequent relationship between these former landowners and the peasants, which was commercial in nature, came to employ social drinking as a vehicle for keeping the commercial alliance on good terms.

Brazil

The first survey of drinking practices conducted in a general Brazilian population was that of Azoubel Neto (39), who studied alcohol ingestion in a district of Ribeirão Preto, São Paulo State. As he reported in 1967, the survey found that 22% of 88 male subjects were abstainers, 48% were moderate drinkers, 17% were excessive drinkers, and 14% were pathological drinkers. The definitions of these categories were not given. Among females (203 subjects), the survey found that 36.5% were abstainers, 52% were moderate drinkers, 10% were excessive drinkers, and 1% were pathological drinkers.

A survey by Luz (cited by Negrete in 1976—11) was carried out in a lower class district of Pôrto Alegre in southern Brazil. The respondents were selected at random from district residents. The drinking status definitions used were those employed by Grimson et al. (36) in Argentina. The rate of problem drinkers found was 10%, which was less than half the 23% reported by Grimson.

In 1978, Vianna Filho et al. (40) studied the

drinking habits of a sample of residents living in the island town of Florianopolis, capital of Santa Catarina State in southern Brazil. Approximately 80% of the respondents were females, an overrepresentation resulting because the interview subjects were not preselected and because the interviews were conducted during the afternoon, when most men were at work. The percentage of nondrinkers was found to be 39% among the subjects in the more urbanized part of the study area and 55% in the remainder. Most drinking appeared to be done at parties and social gatherings. Only 3% of the respondents in the urbanized area and 6% of those in the unurbanized area said they drank every day. Drinking was usually done in the home. The beverage most frequently drunk was *cachaça* (spirits distilled from sugarcane), followed by beer and then wine.

In addition, two recent papers by Masur et al. (41) and Moreira et al. (42) have reported on the drinking patterns of patients admitted to general hospitals in two parts of Brazil. Masur et al. (41) worked with a random sample of 63 women and 50 men who were hospitalized for treatment of various organic pathologies. The criteria used by the authors to define alcoholism was the daily ingestion of at least 150 ml of ethanol or the ingestion of 450 ml of ethanol during weekends. On the basis of these criteria, they found that 58% of the men and 18% of the women reported drinking enough to be classified as alcoholics. This research was later repeated at two hospitals in northeastern Brazil by Moreira et al. (42). The results of this work indicated lower rates of alcoholism than those reported by Masur et al.—especially in one rural hospital, where the apparent rate of alcoholism was half the rate found by Masur et al. among men and a fifth of the rate found by Masur et al. among women.

Chile

The first surveys of drinking practices developed in Chile dealt exclusively with the urban population of Santiago. A survey by Marconi (34), published in 1955, and two others by Hono-

rato et al. and by Horwitz et al. (both cited by Marconi in 1967—18) all reported rates of abstinence, moderate drinking, pathologic drinking, and intoxication. The best-known of these surveys, and the only one published in English, is that performed by Marconi et al. (34). In this survey the area studied was a working-class suburb of Santiago that the authors considered typical of Chile's urban working-class districts.

The prevalence of alcoholism in this area was found to be 4.2% (8.3% among males and 0.6% among females). Excessive drinkers included 28% of the males and 0.5% of the females studied. Drunkenness was very common among male subjects, 43% of whom reported getting intoxicated at least "each weekend." Also, 22% of the men reported drinking alcoholic beverages daily before breakfast. In discussing this latter finding, Marconi rightly concluded that since drinking first thing in the morning was so prevalent among the Chilean subjects surveyed, it could not rightly be considered a sign of addiction in this population.

The survey by Honorato et al. dealt with drinking patterns in a working-class population of Santiago. It classified 19% of the survey subjects as abstainers, 53% as "irregular" moderate drinkers, 20% as "regular" moderate drinkers, and 2% as excessive drinkers. The percentage classified as alcoholics (6%) was a little higher than the percentage previously so classified by Marconi (34).

The survey by Horwitz et al., a study of "Gran Santiago," also found a relatively high proportion of alcoholics (5%). The operational indicators of alcoholism used in this survey were "inability to abstain" and "inability to stop drinking" in accordance with the concepts later developed by Jellinek (43) and adopted by Marconi (31) to indicate physical addiction. Excessive drinkers (defined as those who had more than 12 episodes of drunkenness in the previous year) were found to constitute 8% of the survey population, the remainder of which was comprised of moderate drinkers (54%) and abstainers (34%). Only 0.8% of the women, as compared to 11% of the men, were found to be alcoholics.

When compared to the previously mentioned findings of Tarnopolsky et al. (33) in Lanús,

Argentina, the results of the foregoing studies by Marconi (34) and Horwitz (18) indicate rates of alcoholism two and three times as great, respectively, as those found by Tarnopolsky. The rates of excessive drinking reported by Marconi (28%) and Horwitz (17%) are also higher than those found in Lanús.

A later study by Moya et al. (44) on the prevalence of mental disorders in the northern area of Santiago found a rate of alcoholism ranging from 1.9% in a middle-class population to 3.9% in an "organized" working-class population and 7.6% in a marginal population. The drinking classification employed was that proposed by Marconi (18).

Outside of Santiago, works published in 1966, 1967, 1970, and 1980, respectively, by Tapia et al. (45), Ruiz et al. (46), Medina and Marconi (47), and Medina et al. (48) have described drinking patterns on the southern island of Chiloe, the province of Cautín, and the province of Talca.

The Cautín study by Medina and Marconi (47) described the drinking patterns of adult Mapuche Indians from five reservations located in rural areas. Nearly all individuals 15 years of age and older were interviewed and their drinking habits assessed. The drinking categories utilized were those previously proposed by Marconi (31).

On the basis of these definitions, it was found that the 70 men studied consisted 3% of abstainers, 46% of moderate drinkers, 26% of excessive drinkers, and 26% of alcoholics. The prevalence of alcoholism among the Mapuche males studied was thus found to be three times higher than that found in the working-class population of Santiago by Marconi (34) and Horwitz et al. (18). It is possible, however, that this figure was artificially inflated by the definition of alcoholism employed. Medina and Marconi (47), in discussing this result, acknowledge that the operational indicators previously applied to urban populations in Santiago were of little use in diagnosing alcoholism among the Mapuche. That is, it was difficult to ascertain the volume of alcohol consumed, and the days on which alcohol was drunk could not be classified as

working or nonworking days because the Mapuches do not customarily divide their time into days of work and days of rest.

Regarding the 75 Mapuche women studied, it was found that 15% were abstainers, 83% were moderate drinkers, 1% were excessive drinkers, and 1.3% were alcoholics. To some extent, the norms influencing alcohol ingestion in the Mapuche study communities help to explain the observed differences in male and female drinking patterns. Specifically, men were found to drink among themselves; women sometimes participated in these drinking sessions, but they never drank among themselves except during parties or other festivities. Also, 40% of the male moderate drinkers (13 out of 32), 88% of the male excessive drinkers (16 out of 18), and 89% of the male alcoholics (16 out of 18), admitted to going on alcoholic binges that lasted one or two days and that were culturally motivated. These occurred during Easter, New Year's, family gatherings, and so forth. The Mapuche study population's preferred alcoholic beverage was wine.

These findings by Medina and Marconi (47) agree well with anthropological observations made by Lomnitz (49) about the Mapuches. According to Lomnitz, Mapuche drinking is basically a "social act between males." This characteristic has been present in Mapuche drinking for more than 400 years, having survived changes in drinking habits due to Spanish colonization and migration to the cities. (Changes in Mapuche alcohol consumption practices over time have included a switch to wine and spirits, drinking in bars, new ritual drinking occasions of non-Mapuche origin, and changes in female drinking norms.)

The Talca Province study described by Medina et al. (48) covered two urban and two rural communities. Data collected in one of the rural communities were assessed as unreliable by the authors, and these data were not reported. No major differences were observed regarding the prevalence of abstainers or other distinct types of drinkers in the two urban communities. When compared to the more rural study population, however, these two communities appeared

to have fewer abstainers (37% and 32% versus 42%) and more alcoholics (20% and 23% versus 12%). In every community, almost all the excessive drinkers and alcoholics were males. Approximately two-thirds of the women were found to be abstainers, with most of the rest being moderate drinkers. Overall, when the data for males and females were combined, it appeared that 52% of the study population were abstainers, 31% were moderate drinkers, 7% were excessive drinkers, and 10% were alcoholics.

Colombia

Previous reviewers (50, 51) have noted an apparent lack of epidemiologic research on drinking problems in Colombia, a situation that persists today. However, in 1977 Mackenzie and Osorio (52) described a study of drinking patterns in a rural eastern community, the first study of drinking patterns ever undertaken in Colombia. The interviewers used in this study were schoolteachers recruited from the local school district. The effect these interviewers may have had on respondents' reporting is not discussed by the authors; however, it appears that considerable underreporting may have resulted from using these authority figures to inquire about drinking patterns.

Marconi's definitions (31) were used to establish the various drinking categories used. Distilled sugarcane spirits and beer were found to be the preferred alcoholic beverages. Episodes of drunkenness were frequent, with 20% of the males and 70% of the females declaring that they had at least one episode of drunkenness per year. According to the authors, these episodes appear to arise out of a native pattern of alcohol ingestion that leads invariably to intoxication.

Overall, 19% of the men were abstainers, 46% were moderate drinkers, 24% were excessive drinkers, and 10% were alcoholics. By comparison, more women (64%) were abstainers, fewer (34%) were moderate drinkers, fewer (2%) were excessive drinkers, and none were alcoholics. Abstention was positively associated with age in both sexes.

There is also an earlier ethnographic study by Sayre (53) that describes drinking customs in three rural communities of southern Colombia. A common association was found in each of these communities between drinking and church-related activities, inebriation being strictly forbidden at the time. Nonritual drinking was found to vary from one population to another. The frequencies of drinking on week nights, of drunkenness, of drinking among women, and of drunkenness-related aggressiveness were observed to increase as prevailing values came to emphasize personal ambition, success, and material gain. The above phenomena were especially common in one community, where Sayre detected ambivalent sentiments about whether to strive for success or simply to accept one's lot in life.

Costa Rica

Costa Rica is one of the few Latin American nations with a steady output of alcohol studies. Most of this research has been performed by the National Alcoholism Institute (*Instituto Nacional Sobre Alcoholismo—INSA*) since its inception in 1973 (54).

One of the first surveys on alcohol-related problems in Costa Rica was that of Adis Castro and Flores (21), published in 1967. The operational definition of alcoholism was that presented in the "Johns Hopkins Questionnaire." The prevalence of alcoholism by sex in a simple random sample of a rural population was found to be 13% among males (N=189), and 0% among females (N=457). The authors do not explain why many more women than men were included in the sample, aside from stating that they should have used a stratified random sampling procedure rather than a simple one. In an urban sample including 41 males and 51 females, the proportion of alcoholics among the males was found to be 24%; again, no alcoholics were found among the women. The smallness of the sample, however, casts doubt upon the representativeness of the results.

More recently, INSA has been developing a

Table 4. Drinking categories of subjects and annual per capita alcohol consumption in seven survey areas of Costa Rica, by sex.

Drinking category or per capita consumption	Limón (city)		Talamanca (canton)		Golfito (city)		San Isidro (city)		Desamparados (canton)		Puntarenas (district)		Santa Cruz (canton)	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
	(N=238)	(N=235)	(N=133)	(N=87)	(N=122)	(N=139)	(N=147)	(N=188)	(N=192)	(N=184)	(N=169)	(N=175)	(N=141)	(N=197)
Long-term abstainers (%)	12	34	15	53	20	58	12	47	15	46	14	58	22	61
Moderate drinkers (%)	41	52	38	31	28	27	35	42	51	48	33	33	37	29
Excessive drinkers (%)	20	8	20	8	24	5	22	3	14	1	26	3	17	4
Alcoholics (%)	12	3	10	1	14	1	8	—	7	1	12	1	11	1
Current abstainers (%)	15	3	17	7	15	9	23	9	13	4	15	6	13	5
Per capita consumption of absolute alcohol (in liters)	7.4		7.4		6.3		4.3		3		3		3.6	

Source: National Alcoholism Institute (*Instituto Nacional Sobre Alcoholismo—INSA*); see references 55-61.

series of surveys of the general Costa Rican population in an effort to learn more about drinking patterns (55-62). These surveys have included all regions of the country (62). The results obtained by seven of these surveys on drinking patterns and alcohol consumption are summarized in Table 4.

The rate of long-term abstention⁶ among males was found to vary from a low of 12% in the city of Limón to 22% in the canton of Santa Cruz. However, long-term abstention was far more common among female survey subjects in all seven study areas, with the percentage of long-term female abstainers being roughly three to four times as high as the percentage of long-term male abstainers in each area. Like male abstention rates, female abstention rates varied considerably—from 34% in Limón to 61% in Santa Cruz.

The proportion of subjects classified as moderate drinkers also varied considerably from one study area to another. No clear association with either sex emerged, males predominating in some areas (notably Talamanca, Desamparados, and Santa Cruz) and females in others (Limón and San Isidro).

As in many other nations of the Americas, far more men than women were found to be excessive drinkers or alcoholics. Specifically, 7 to 14% of the male survey subjects in each of the study areas were found to be alcoholics. Moreover, if the categories "excessive drinkers" and "alcoholics" are lumped together, it appears that a substantial portion of the male survey subjects (ranging from 21% in Desamparados to 38% in Golfitos and Puntarenas) fell into this group. In contrast, the females in these two categories never accounted for over 11% of the female survey subjects in any area.

Finally, regarding annual per capita consumption of alcohol, this was found to vary consider-

ably from one study area to another—ranging from the equivalent of three liters of absolute alcohol per annum in Desamparados and Puntarenas to 7.4 liters in Limón and Talamanca.

Ecuador

According to Pacuru Castillo (63), as of 1972 the preferred alcoholic beverage in Ecuador consisted of distilled spirits made from sugarcane. (Cultivation of sugarcane, as of 1966, took up some 11% of all the cultivated land in the country.)

A study of alcoholism by Canelos and Cevallos, described by Endara in 1967 (64), dealt with an Ecuadorean Indian community on the outskirts of Quito. This study obtained information from 90 individuals, selected by systematic random procedures from among people treated at a medical facility, who constituted a 10% sample of the community population. The results, according to Endara, found drinking to be associated with subjects who were male, single, young, and of low socioeconomic status.

Guatemala

A 1940 report by Bunzel (65) described drinking in a Guatemalan Indian community. According to the author, drinking was associated with fiestas and market days. Alcohol was also consumed in large quantities during dancing parties, and drinking episodes could develop into long benders that might last for days. Such benders were marked by disruptive behavior—including quarrels between neighbors and families and loss of money. Their consequence, as Bunzel puts it, was "an enduring aftermath of guilt and anxiety." Somewhat more recent studies include a 1967 report by Aguilera (66) that described sociocultural aspects of alcohol consumption, as well as treatment and preventive programs, and a 1973 contribution by Rivera-Lima (22) that presented data on alcohol production, alcohol-related legal offenses, and the treatment system existing at the time.

⁶The category "current abstainers" was devised by the author to include former drinkers and former problem drinkers who had abstained continuously for at least one year prior to the survey interview. If these "current abstainers" are lumped together with the long-term abstainers, the differences between male and female abstainers appear reduced.

Honduras

There have been very few studies of alcohol consumption and drinking practices in Honduras. However, a recent report by Natera et al. (67) provides a summary of some existing studies in the course of describing an investigation that the authors performed in Honduras and Mexico.

This latter investigation, conducted in two areas of central Honduras, made use of the "informant" method developed by Jellinek.⁷ The informants were selected from rural areas, and 30 groups with a total of 178 participants were formed. All the participants were males, a fact which placed some limitations on the findings, especially those relating to women's attitudes toward alcohol consumption and drinking habits.

A majority of these 30 groups indicated that men in Honduras begin to drink before 18 years of age, while women begin to do so a little later, after 19 years of age. This first drink is usually taken "with friends without parents' permission." The groups reported a striking difference in the places where men and women do their drinking; that is, 70% of the groups said that men did most of their drinking "only in public places," while 60% said women drank "only at home."

The social norms associated with drinking by men and women also seemed very different. Most of the groups (57%) indicated that both men and women disapproved of moderate drinking by women. Nevertheless, it was generally felt that women had a high degree of tolerance for drunkenness among men; 50% of the groups indicated that women saw men's intoxication as something that was "undesirable but that one has to tolerate."

⁷The method developed by Jellinek consists of collecting information on alcohol use and drinking patterns from several groups of people who are assembled according to occupation and who meet to discuss patterns of alcohol use in their own professional groups. The discussion is coordinated by a trained leader who follows a prearranged schedule of discussion topics. The material obtained from the groups is then combined in order to derive a picture of alcohol use in the community.

Drinking was also associated with social and sports activities. A majority of the groups (64%) agreed that a party without alcoholic beverages would be considered a failure by most of the community, and that during sports gatherings both spectators and participants drank. The reasons cited for drinking, in decreasing order of importance, were because it was "a habit," "to bring friends closer together," "to rest," "to calm down the nerves," and "to make work easier." Reasons for abstaining, also in decreasing order of importance, were health-related problems, moral problems, fear of the consequences, economic reasons, moral reasons, family problems, and work problems.

Mexico

Alcohol problems in Mexico have received considerable attention from researchers, and a number of studies have been carried out there. These have dealt both with cross-sections of the general population and with special groups.

A 1967 review by Cabildo (68) describes three initial studies that were performed to assess the general prevalence of psychiatric problems and which provided information about alcohol problems. These studies dealt mainly with the diagnosis of alcoholism, without touching on other drinking problems or drinking patterns. One of these studies, performed by the Dirección de Salud Mental y Dirección de Bioestadística on a national sample, found the rate of alcoholism to be 0.55%. Similarly low rates of alcoholism were indicated by a survey of Mexican Government employees conducted by Cabildo, which found the rate of alcoholism to be 0.7%, and by a survey of military personnel performed by Ayuso et al. that also found a rate of 0.7%. (The questionnaires used in these two latter surveys were the same.)

Another survey of drinking patterns, reported by Cabildo et al. in 1969 (69), was carried out in the northern part of Mexico City. The survey sample consisted of 550 subjects classified as belonging to the middle and lower middle classes; the interviewers were medical students; and the categories of drinking patterns employed were

those devised by Marconi in Chile. This survey found that 29.5% of the males and 76% of the females included in the sample were nondrinkers; 46% of the males and 19% of the females were moderate drinkers; 12.5% of the males and 2.5% of the females were excessive drinkers; and 11.5% of the males and 2.5% of the females were alcoholics. Age was found to be inversely associated with abstinence and directly associated with alcoholism. Obviously, the rates of alcoholism observed are far higher than those cited in the three earlier studies (68).

In 1972, Maccoby (70) described a study of alcoholism in a mestizo agricultural community in the state of Morelos. The target population included all community members over 15 years of age. However, Maccoby concentrated particularly on the male population, interviewing 191 out of 208 male community members over 15 years of age. Alcoholism was determined by the subject's degree of failure to meet social obligations. Excessive drinking was defined as drinking beyond cultural norms (e.g., losing workdays because of drinking). Moderate drinking was defined as drinking that did not interfere with social responsibilities. Using these definitions, the rate of alcoholism among males in the village community was found to be 14.4%, with 13% being classified as excessive drinkers, 52% as moderate drinkers, 16% as abstainers, and another 4% as "current" abstainers. The rates of alcoholism and excessive drinking are comparable to those reported by Cabildo et al. (69). Heavy drinking was positively associated with age. Within the male population 40 years of age and older, it was found that 32% of the interview subjects were alcoholics and 16% were excessive drinkers. Among males between 16 and 40 years of age, alcoholics and excessive drinkers, respectively, accounted for 8% and 12% of the subjects interviewed.

More recently, the Mexican Institute of Psychiatry has carried out surveys of drinking practices in a number of Mexican cities.⁸ Among these were surveys in the cities of La Paz (71),

San Luis Potosí (72), and Mexico City (73), all of which used the same sampling methodology, data collection procedures, and drinking classifications. The subjects included in each survey were selected at random from the local population.

The drinking classifications used by these surveys were as follows:

- abstainer—a person who did not drink during the last year;
- occasional drinker—a person who drinks less than once a month but at least once a year;
- intermediate drinker—a person who drinks one to three times a month;
- regular drinker—a person who drinks at least once a week.

The drinking patterns found are indicated in Table 5. Between 25 and 30% of the males in each survey population were found to be abstainers, while between 27 and 34% were judged to be "infrequent" drinkers. More males (18 and 19%, respectively) were classified as habitual "regular" drinkers in San Luis Potosí and in La Paz than were so classified in Mexico City. On the other hand, the proportion of males classified as regularly engaging in "light" or "moderate" drinking was higher in Mexico City than in the other two centers. Between 31 and 38% of the women in each city were classified as infrequent drinkers, between 4 and 13% were classified as light or moderate "regular" drinkers, and between 1 and 6% were classified as habitual "regular" drinkers. The percentage of women classified as habitual "regular" drinkers was considerably lower in Mexico City (1%) than in San Luis Potosí or La Paz.

Another fairly recent study, this one of a rural community, was reported by Smart et al. (74) in 1980. This study, which utilized the previously described "informant" method to collect information, dealt with a community of some 5,198 inhabitants southwest of Mexico City. The information was collected from 30 groups, each of which had five members. This investigation found that the average daily consumption of different alcoholic beverages by members of the male population was 1.5 liters of *pulque* (a fer-

⁸De la Parra et al. (72) cite surveys in Mexico City, La Paz, Monterrey, Puebla, Mexicali, and San Luis Potosí.

Table 5. Drinking patterns of survey subjects, by sex, in three Mexican cities.

	San Luis Potosí ^a		Mexico City ^b		La Paz ^c	
	Males %	Females %	Males %	Females %	Males %	Females %
<i>Abstainers</i>	25	56	28	49	30	58
<i>Infrequent drinkers</i>	34	31	33	38	27	32
<i>Regular drinkers</i>						
Light or moderate drinkers	23	9	28	13	22	4
Habitual drinkers	18	4	12	1	19	6
<i>No response</i>		14		10		—
<i>Total size of sample</i>		624		2,733		444

^aSource: De la Parra et al. (72).

^bSource: Medina-Mora et al. (73).

^cSource: Medina-Mora et al. (71).

mented drink made from the sap of the magay plant), two bottles of beer, and half a glass of distilled spirits. Women and men seemed to drink separately. More detailed reports of this study (67, 75) indicated that 73% of the participating groups said women drank mostly at home; 30% of the groups said men drank in public places. Women were found to drink less than men, but also to have a marked tolerance for men's heavy drinking. Reasons cited for drinking, in decreasing order of prominence, were "habit," "to bring friends closer," "to rest," "to calm the nerves," and "to make work easier." Reasons given for not drinking, also in decreasing order of prominence, were "health reasons," "moral reasons," "economic reasons," "fear of the consequences," "family problems," "work problems," and "dislike of the taste."

The most recent, and certainly the most comprehensive, study of drinking patterns in Mexico's general population was that carried out as part of a WHO study of community responses to alcohol-related problems. The data from Mexico have been described both by Calderón et al. (76) and by Roizen (77). As pointed out in these sources, the study classified some 19% of the male subjects involved as "abstainers," 33% as "occasional drinkers," 25% as "intermediate drinkers," and 22% as "regular drinkers." In a similar manner it classified 42% of the female subjects as abstainers, 40% as "occa-

sional drinkers," 9% as "intermediate drinkers," and 9% as "regular drinkers."

Regarding age, the highest prevalence of drinking (91%) was found among men in the 30-49 year age group, the prevalences being somewhat lower among men 18-29 years of age (83%) and among those 50 years of age and over (76%). No marked differences in drinking prevalences were found among women in different age groups, the prevalence in most age groups being around 50%.

In this same vein, drinking at least once a week was found to be more frequent among men than among women, among rural than among urban residents, and among older people than among the young. Twenty-seven percent of all female drinkers and 59% of all male drinkers said they got drunk but did so only about once a month or less; 1% of the female drinkers and 8% of the male drinkers said they got drunk one to three times a month; and none of the female drinkers and 7% of the male drinkers said they got drunk at least once a week.

Norms regulating drinking in the communities studied were found to differ greatly for the different sexes. Specifically, while 27% of those surveyed said they would not permit a man 21 years of age to drink, nearly twice as many (53%) said they would not allow a woman the same age to do so. Similarly, 15% said they would withhold permission to drink from men

40 years of age, while 43% said they would withhold permission from women of that age; and 37% said they would not permit men 60 years of age to drink, while 57% said they would deny permission to women of that age.

The study also found that male drinkers reported a relatively high prevalence of personal problems. That is, 36% reported experiencing shaking hands the morning after drinking, 55% said they felt guilty about drinking, and 55% said they felt they should reduce their drinking or stop drinking altogether. Interestingly, rural male drinkers reported approximately twice as many problems as their urban counterparts.

When presented with a list of seven problems or practices commonly associated with alcoholism, 7% of the male drinkers surveyed reported having six or more, while 14% reported having five or more. Interestingly, rural male drinkers reported having about twice as many of these problems as their urban counterparts. The apparent prevalence of such problems among female drinkers was lower, only 2% reporting six or more and 4% reporting five or more.

Certain problems turned out to be relatively more common. Having "hands that shake a lot in the morning after drinking" was reported by 50% of the rural male drinkers, 36% of all the male drinkers surveyed, and 15% of the female drinkers surveyed. Similarly, "having a drink first thing in the morning" was reported by 18% of the rural male drinkers and 13% of the urban male drinkers. However, the prevalence of this practice was lower among women drinkers, being reported by only 4% of those in urban areas and 3% of those in rural areas.

Peru

Various epidemiologic surveys have been carried out in Peru for the purpose of assessing psychiatric diseases, including alcoholism. Rotondo et al. (cited by Mariátegui—78 in 1967) conducted one such survey in a disorganized and socially unstable community in central Lima. The authors found that the combined prevalence

of excessive drinkers and alcoholics in this population was 8.8% (13% among males and 3.4% among females). Markedly higher rates of alcoholism were found among subjects who were relatively old (over 59 years of age), who were migrants, or who came from disorganized family units.

In a separate contribution, Mariátegui (79) reported on a survey he had conducted in Lince, another urban district of Lima. This report did not specify how "alcoholism" was defined, but other publications by the same author (51, 78) suggest that indicators of "alcohol dependence" similar to those utilized by Marconi in Chile may have been employed. In any case, alcoholism and regular excessive drinking reported in a population sample 15 years of age and older was $2.68 \pm .35\%$, considerably lower than the 8.8% reported by Rotondo (78). Two other Peruvian surveys that assessed the prevalence of alcoholism yielded rates similar to those reported by Rotondo. That is, Christiansen and Malca (cited by Mariátegui—80) found a 9% prevalence of alcoholism in the coastal city of Trujillo in northern Peru, and Rotondo et al. (cited by Mariátegui—80) also reported a 9% prevalence of alcoholism in a rural province near Lima.

Information on alcohol consumption and drinking patterns among the Indian inhabitants of Peru, an important segment of the country's population, comes almost exclusively from ethnographic studies. A 1957 report by Mangin (81) described drinking patterns and alcohol-related customs among the 1,800 residents of the Vicos community in the Peruvian Andes. This account indicated that drinking often led to drunkenness among adult males; and although drinking was frequent, it remained a social activity "integrated with the most basic and powerful social institutions in the community." Since most of the drinking was done in social situations, as in the case of the Mapuche studies by Medina and Marconi (47) and by Lomnitz (49), there appeared to be no solitary drunkards in Vicos. The absence of alcohol-related pathology in Vicos was thus explained by Mangin as a function of the integration of drinking and culture.

A somewhat similar drinking pattern has been described by Simmons in Lunahuana, a mestizo community south of Lima (82, 83). As in Vicos, drinking in this community was widespread and very frequent. Attitudes towards drinking were permissive, and people did not tend to define drinking as a "social problem." Alcohol consumption was a social activity and had both anxiety-reducing and integrative roles in the society. Solitary drinking was seen as abnormal, and it was generally believed that men who drank alone did so because they were "stingy and did not want to share their liquor."

Uruguay

Information about alcohol-related problems in Uruguay is very limited. A 1967 report by Muñoz (84) reviews information on alcohol involvement in traffic accidents, as well as laws and regulations applying to alcohol-related legal offenses. However, the data referred to date back to the beginning of the 1950s and must by now be outdated. The same must be true of Jellinek's commentaries, published in 1976, on liquor production and alcohol consumption (85).

Venezuela

Two reports published in 1961 (86, 87) describe a survey of the prevalence of psychiatric morbidity in sample urban, semirural, and rural populations. Two urban areas were surveyed. In one of them, 221 individuals were interviewed and the prevalence of alcoholism was found to be 1.8%. In the second, data were obtained on 120 individuals, and the prevalence of alcoholism was found to be 2.5% (86). The prevalence of alcoholism was found to be somewhat higher (5%) among the 210 semirural survey subjects (87) and somewhat lower (1%) among the 731 rural survey subjects (86). Unfortunately, neither of the published reports provides adequate information about the survey methodology, and neither the sampling procedures used nor the definition of alcoholism employed are described.

Conclusions

Epidemiologic research on alcohol-related problems in Latin America has been underway now for almost 30 years. However, as indicated by the literature, very few countries have shown enough sustained interest to pursue alcohol studies throughout that period, about the only ones that did being Chile and Costa Rica. More recently, researchers in Mexico have performed studies on the community response to alcohol-related problems within the framework of international collaboration with WHO.

In general, the published studies have not directed their attention at the whole spectrum of alcohol-related problems in Latin America, but instead they have concentrated on the epidemiology of severe forms of drinking. This orientation has been based on a theoretical approach that regards alcoholism as a disease, a notion that has shaped the framework of epidemiologic studies on alcohol use in Latin America.

These studies have also concentrated on urban and working-class populations, giving relatively little attention to marginalized urban groups, rural populations, and the upper classes. The drinking practices of native populations have been investigated, but with ethnographic rather than epidemiologic methods. Moreover, almost no attention has been given to associations between alcohol and traffic accidents, alcohol and crime, alcohol and suicide, alcohol and work problems, or alcohol and morbidity and mortality. As a result, alcohol studies in Latin America do not provide a general epidemiology of alcohol-related problems in the Region, but rather an epidemiology merely of alcoholism in the urban working class. The window opened onto the community by these studies is therefore very narrow, and gives only a very partial view of the nature and characteristics of alcohol-related problems.

Considering all this, what can be learned about drinking and alcohol-related problems in Latin America from the studies reviewed here, despite these limitations? To answer this question, we have to step back from the particular studies and examine from a distance the multitude of results

they have produced. In doing this we may be able to discern patterns of association or contrasts in the findings that could not be seen otherwise and that cut across national boundaries.

From this perspective it is easy to see that alcohol constitutes a legitimate source of concern for researchers in Latin America. This conclusion is not based primarily on the extent and quantity of alcohol-related problems in the region, for as yet very little can be said quantitatively about that; rather, the conclusion is based on the extent to which alcohol use is associated with everyday life in Latin America. That is, drinking commonly occurs first thing in the morning, during the day, in the evening, during weekdays or weekends, at religious ceremonies, at baptisms, at funerals, at marriages, during sport activities, in toasting one's health, to promote socializing, to celebrate revolutions or to mourn them, to bring friends closer together, because tradition tells one to drink, because there is little else to do, because drinking is what men are supposed to do, and so forth—the list is almost endless.

It is also easy to perceive marked differences in the norms associated with alcohol use by men and women and consequent contrasts in the drinking patterns of the two sexes. Except perhaps among the upper classes, about which there is very little data on drinking practices, excessive drinking is basically a male problem, the great majority of women being abstainers or moderate drinkers. Likewise, drinking to intoxication tends to be a male prerogative, one that tends to be tolerated by both men and women. This contrast in normal patterns of alcohol use helps to explain why it is mainly men who are recognized in the community as having alcohol-related problems and who are receiving treatment for them in psychiatric hospitals.

Looking at the results across national boundaries, it is possible to see major differences in the extent of excessive drinking and the distribution of alcohol-related problems. (The PAHO data on mortality from cirrhosis appear to provide some of the best indications of such differences—1).

In general, using Puffer and Griffith's San

Francisco data (1) as a basis for comparison, Chile, Mexico, and Guatemala seem to be in the forefront of Latin American countries with a sustained high prevalence of "heavy" drinking, while the northern countries of South America appear to be at the other end of the spectrum. There also appear to be considerable differences in the prevailing percentages of "alcoholics" and "excessive drinkers" in the populations of different countries. Among male survey subjects, the reported prevalence of alcoholics ranges from 5% in Argentina to 10% in Colombia, while the reported prevalence of excessive drinkers ranges from 12% in Argentina to 26% in portions of Costa Rica and 28% in Chile. Data from Chile, Costa Rica, and Mexico also indicate that there are significant variations within each country. Altogether, these subnational and national differences, as well as marked differences in the kinds of alcoholic beverages consumed, make it impossible to identify any one drinking pattern as being "typical" of Latin America as a whole.

The studies reviewed here also reveal differences in how alcohol use and alcohol-related problems are perceived by indigenous Latin American populations on the one hand and by urban Latin American populations with European-based cultures on the other. That is, the ethnographic studies performed to date suggest that while drinking—including heavy drinking—is a common practice among indigenous populations, there seems to be relatively more tolerance for the effects of these practices and a lower rate of problems. This matter is well worth investigating further through application of an appropriate methodology to both of the two cultures involved.

In conclusion, the following recommendations can be made:

- 1) A basic requirement for the successful organization and development of any research project is an assessment of the literature in the field. As noted in this review, the literature on alcohol use in Latin American countries is widely scattered. Many journals have a limited and irregular circulation, and substantial research remains unpublished as master's or doctoral dis-

sertations. It would seem, therefore, that the organization of a clearinghouse for the scientific literature on alcohol is a necessary step to furthering the development of alcohol research in the region. (The PAHO-sponsored Regional Library of Medicine located in São Paulo, Brazil, would appear to provide one of many potentially convenient locales for such a clearinghouse.) Besides helping researchers already established in the field, a clearinghouse of this kind would also have an impact on young researchers who are planning dissertations, and who might be attracted to the study of alcohol problems if facilities for bibliographic research were available.

2) This review has highlighted many instances of methodologic shortcomings among the epidemiologic studies carried out in Latin America. The problems encountered affect a wide range of matters including sampling procedures, data collection, and the statistical treatment of the data. It would therefore seem desir-

able to enhance the level of expertise of researchers in this field in Latin America. This could be done either by organizing research seminars or, better yet, by developing research projects in the area that would provide on-the-job training for research personnel. The WHO study of community responses to alcohol-related problems referred to earlier (76, 77) is one example of this type of effort.

3) Epidemiologic studies of alcohol use in Latin America should be broadened to include a wide range of alcohol-related problems, not only those associated with heavy drinking. Research on the association between alcohol and related casualties (from such things as traffic accidents) should also be encouraged. As one of the initial steps in this broadening process, an effort should be made to describe the ways in which the legal systems of selected Latin American countries handle alcohol-related problems.

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SUMMARY

This work provides a review of the available epidemiologic literature on alcohol consumption in Latin America. The first section reviews data on alcohol-related mortality, traffic accidents, crime, suicide, and psychiatric problems; the second section summarizes surveys of drinking patterns and alcoholism that have been conducted in 13 Latin American countries; and the third section presents a number of conclusions and suggestions for future research.

In general, the published studies on alcohol-related problems in Latin America have concentrated on the epidemiology of severe forms of drinking among urban and working-class populations. They therefore

give a fragmented and incomplete view of these problems. Even so, they clearly demonstrate that alcohol constitutes a legitimate source of concern for researchers, mainly because its use is extensively associated with everyday life. They also show sharp contrasts in drinking patterns among the two sexes—to the degree that excessive drinking and intoxication are basically male problems, the great majority of women being abstainers or moderate drinkers.

With regard to cultural differences, the available studies suggest that there seems to be more tolerance for the effects of drinking among indigenous populations than among populations with a European culture

base, together with a lower rate of alcohol-related problems. This matter is worth fuller investigation.

At present, the literature on alcohol use in Latin America is widely scattered, with many of the journals involved having limited or irregular circulation, and with a substantial amount of the research appearing only in the form of unpublished dissertations. It would thus appear that establishment of a clearinghouse for alcohol-related literature should be regarded as essential for the further development of research in this field.

Also, methodologic shortcomings in many of the

available studies suggest that research seminars covering such matters as sampling procedures, data collection, and statistical analysis should be organized, or that research projects specifically designed to provide on-the-job training for research personnel should be developed. In addition, epidemiologic studies of alcohol use in Latin America should be widened to encompass a broad range of alcohol-related problems; and research on associations between alcohol and related effects (such as traffic accidents) should be encouraged.

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FRANCE SUSPENDS VACCINATIONS AGAINST SMALLPOX

On 30 May 1984 France suspended obligatory vaccination and revaccination against smallpox. The suspension, which applies to the civilian population and personnel working in health care and disease prevention establishments, came five years after French suspension of primary vaccination.

A safety stock of five million doses of vaccine and 1,500 doses of immunoglobulin is being retained. Vaccine production capacity will be maintained for five years.

This development means that all countries in the world except Albania have now reported to WHO that obligatory vaccination has been discontinued. Information on Albania's policy is awaited.