

# Alcoholism and Other Substance Abuse: Preventive Programs in Santiago, Chile

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*This paper describes efforts that began in the 1970s to prevent alcohol and drug abuse among adolescents in Chile and discusses current health promotion programs that focus on prevention of health-endangering behaviors. Adolescent substance abuse has been found to be strongly correlated with familial dysfunction and parental drug abuse as well as with certain behavioral characteristics. Therefore, prevention activities should target high-risk children as identified by screening instruments. Interventions should be carried out at the individual, school, family, community, and societal levels. It is important to analyze the feasibility of implementing prevention activities and to systematically evaluate their effectiveness.*

Substance abuse constitutes a growing concern for public health practitioners, pediatricians, and other primary care physicians. Alcoholism is now endemic in many regions of the globe. In the Western world, several epidemics of abuse of other drugs—barbiturates, meprobamate, marijuana, psychedelics, amphetamines—have followed in sequential waves throughout this century, and especially since World War II. The trendy drug in the 1980s has been cocaine, a very dangerous substance not only from a medical but also from a socio-economic point of view (1).

In Chile, we have been involved in the fight against these epidemics since the late 1960s. We focused first on measuring their prevalence through epidemiologic studies, next on organizing treatment programs, and later on designing preventive interventions. This paper will review some of our findings, along with some relevant data from other countries in the Americas. It will then address spe-

cifically the possibilities of an integrated adolescent health promotion program.

## DRUG USE SITUATION

Since the 1950s, studies of the epidemiology of the abuse of alcohol and other drugs have faced the task of defining levels of use. The difference between occasional (or social), frequent (or abusive), and addictive (or dependent) use is widely accepted today. In the case of alcohol, Chilean studies agree (2, 3) that 5% of persons over 15 years of age are alcoholics, an additional 15% are frequent (or "excessive") users, 60% are moderate ("normal") drinkers, and 20% are abstainers. Other Latin American studies have arrived at similar results.

In San José, Costa Rica, the Institute on Alcoholism and Drug Addiction (IAFA) has studied several different student populations (4). A national survey on levels of consumption of alcoholic beverages among a representative sample of young people from 15 to 20 years of age found that 6.5% of the subjects reported problem drinking, with frequent episodes of drunkenness, and that the proportion

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tended to increase with age, from 3.1% at ages 15 to 17 to 8.4% at ages 18 to 20. In a study of student drinking practices, about 40% of the students were found to have experimented with alcohol, usually in the context of family social interactions. The average age of onset of drinking in Costa Rica was 15.4 years.

The Costa Rican studies have underscored the importance of studying special populations, such as rural adolescents and those living in marginal urban areas or indigenous communities. The characteristics of drug use in marginal urban environments are especially worthy of study. Young people in this setting are put at high risk by a number of factors: lack of social support, familial dysfunction, and socioeconomic deprivation, among others. In marginal areas of big cities such as São Paulo, Brazil, the use of volatile solvents, which are highly toxic substances, is especially frequent among not only adolescents but also small children (5).

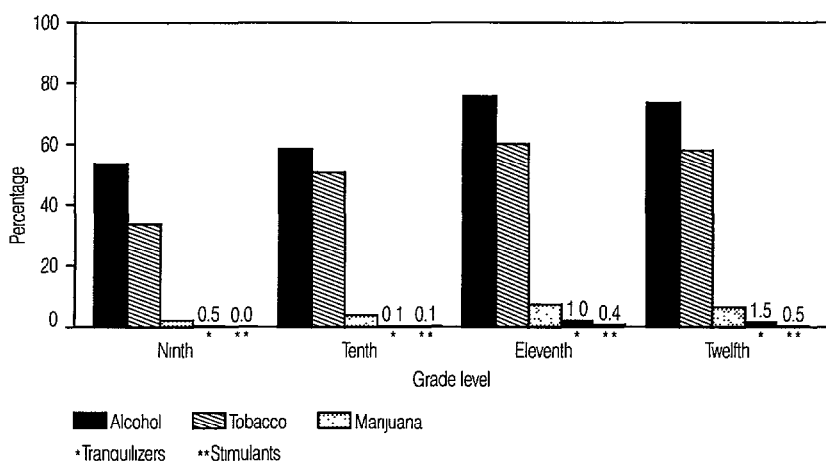
There are few alcoholics or full-blown substance abusers among young people, since the addictive process can take years or decades to develop. However, our findings (6) show that 10–50% of the stu-

dent population in Chile uses alcohol and 9–12% drinks to excess. The consumption of alcohol increases markedly between the second and third years of high school (Figure 1). Levels of use of marijuana and other illegal drugs are much lower. The situation is different in other countries. Consumption of illegal drugs appears to be much more common in developed countries than in developing nations. For instance, comparison of the data from national surveys of high school seniors in the United States (7) with Colombian data (8) shows that in the former country there is a much higher consumption of marijuana, cocaine, and psychotropics. The difference is not as clearcut for alcohol and tobacco use (Figure 2). Most epidemiologic studies bring to light a disturbing fact: the frequency and amount of alcohol and other drug abuse among youth—as well as among women—seems to be rising.

## PREVENTION AND TREATMENT

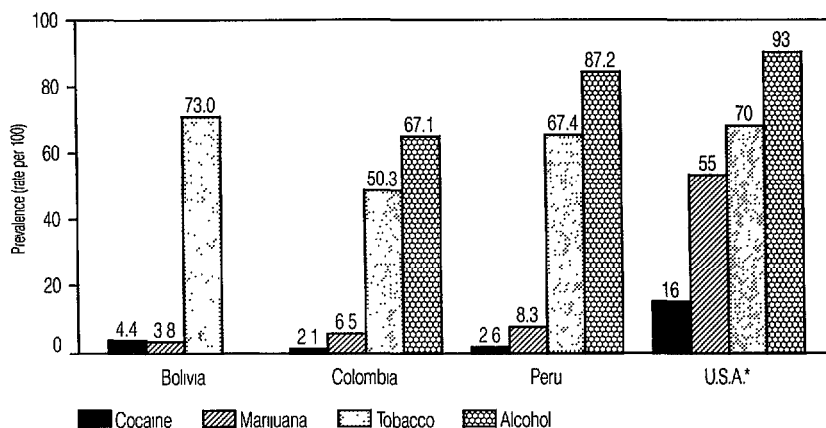
### Conceptual Framework

Various types of preventive interventions are possible. *Primary prevention fo-*



**Figure 1.** Use of psychoactive substances among 1,240 high-school students in Santiago, Chile, by grade, 1981.

**Figure 2.** Lifetime prevalence per hundred population of consumption of psychotropic substances in four countries of the Americas.



\*Rates correspond only to students in last year of secondary school

Sources: Bolivia—De la Quintana, M. Informe sobre el Consumo de Sustancias Psicoactivas en Bolivia. Ministry of Public Health, La Paz, 1988. Colombia—Torres de G., Y. Estudio Nacional sobre Alcoholismo y Consumo de Sustancias que Producen Dependencia. Bogotá, 1987. Peru—Jutkowitz, J. Uso y Abuso de Drogas en el Perú. Lima, 1987. U.S.A.—National Institute on Drug Abuse. Use of Licit and Illicit Drugs by America's High School Students: 1975–1984. Washington, D.C., 1985.

cuses on the search for causes of alcoholism and substance abuse, such as the genes that predispose some people to develop familial or inherited alcoholism, and on modifying some of the environmental risk factors (family problems, peer and media pressure, etc.) that can lead to milieu-activated substance abuse. Primary prevention seems to be a rational approach to alcohol and other substance abuse problems among youth. The best way to prevent the consequences of drug consumption is to begin drug use prevention efforts in preadolescence, since the average age of onset of chemical consumption is 14 to 15.

*Secondary prevention* looks for clues to early involvement with alcohol or drugs. This can be done through screening school populations with some of the short scales available, such as modified forms of the Michigan Alcoholism Screening Test (9, 10, 11). Pediatricians and other primary health care providers

are also in a prime position to carry out these activities.

*Tertiary prevention* focuses on helping those youngsters who have already developed a problem to avoid further health- and life-threatening complications. The advent of the AIDS epidemic has made death a real and less remote consequence of I.V. drug use, rather than the long-term threat that was associated with that type of drug abuse in the past.

The escalating number of addiction cases has elicited a need for more treatment facilities. The trend seems to be moving from inpatient, residential treatment programs toward outpatient detoxification and community-based programs. The latter seem to be more cost-effective (12) and less disruptive, both to the individual and to family equilibrium. When programs are just being initiated, it is usually only the most chronically ill individuals who receive treatment.

Part of the negative image many clini-

cians have of alcoholics and other substance abusers can be related to their hospital-based training, in which they saw only terminal, skid-row-type alcoholics. The prognosis for such cases remains gloomy, both in terms of survival and relapse rates. Secondary prevention (early case identification) is therefore a high priority area.

## **The Chilean Program**

The development of treatment services in Santiago, Chile, has moved from government mental hospitals with acute detoxification wards to the development of psychiatric units in general hospitals and then to an array of services in the community. A variety of approaches are used to serve adolescents within the primary care system. They are seen in primary health care clinics with special programs for their age group, in specialty clinics (for drug-using adolescents, pregnant adolescents, etc.), and in integrated health services for teenagers (adolescent health clinics) (13). We are presently evaluating the comparative efficacy of those different approaches (14).

Primary prevention programs are difficult to implement and evaluate, as we have been learning in the last decade at the Faculty of Medicine of the University of Chile (UCH). The first program, designed and implemented in the late 1970s, was a joint effort of the Chilean Ministry of Health and Ministry of Education to teach primary school-level students about the effects and consequences of alcohol use (15). This program was based on additions to the curriculum, and was to be implemented by teachers nationwide. After a decade in use, the main problem has been found to be lack of adequate implementation (16). The teachers state that they do not know enough about alcohol and other sub-

stance abuse problems, or they have negative attitudes about the subject.

Our field laboratory has been a seven-municipality area in the Eastern Region of Metropolitan Santiago. The "Servicio de Salud Metropolitano Oriente" (SSMO) is the health system charged with caring for a population of almost one million people in that area. A large tertiary care hospital complex and 17 ambulatory clinics offer care to the segment of the population that cannot afford private services, which is between 50% and 98% of the population, depending on the neighborhood.

We have experimented with several models of primary prevention of alcohol/substance abuse. The first one focused specifically on changing attitudes and imparting knowledge about the effects and consequences of alcohol/substance abuse among adolescents (17). A parallel survey in one of the school systems of our study area (La Reina) showed that alcohol/substance abuse was quite low on the students' list of perceived problems or concerns. Therefore, they were not very interested in our six-hour-long drug workshop. In addition, the audiovisual technology we employed (videotapes or 10- to 15-minute slide shows) did not encourage active student participation.

We moved next to a different format, with a focus on promoting the broader mental health of the youngsters and indirectly touching on substance abuse. The contents of this very active and participatory workshop were geared toward enhancing communication skills, self-esteem, and decision-making techniques, and included home assignments in between sessions. This approach was much better received by the students, as shown in the follow-up evaluation study (18).

Finally, we have moved to a still broader approach that focuses on the

promotion of adolescent health. We have found that substance abuse is only one element in an array of risky or unhealthy behaviors clustering in adolescence, such as early sexual experimentation (frequently resulting in pregnancy), reckless driving, and other impulsive behaviors leading to accidents. We have designed an anticipatory life-planning workshop for preadolescents that focuses on educating children ages 10 to 14 on the risk of such behaviors and promotes health-protective or health-enhancing ones instead.

Parallel to this attempt to design, implement, and evaluate primary prevention activities, we have organized a network of adolescent health services. In both the general and the pediatric hospitals that serve the study area, specialty clinics have been opened: obstetrics-gynecology clinics offer services for adolescent girls, psychiatry and adolescent mental health clinics serve youngsters with emotional and behavioral disturbances, and endocrinology clinics treat children with developmental deficits. Patients are referred to those clinics from the primary health care system, since all of the 17 general purpose ambulatory clinics throughout the area see adolescents. There are two adolescent health clinics, where a multidisciplinary team serves patients 10 to 19 years old. Several other "adolescence centers" focus primarily on treatment of substance abusers. They sometimes work with a general practice or family physician who evaluates and treats other problems. These last clinics have been created separately from the local health system and report directly to the Ministry of the Interior. Data collection is ongoing to assess the efficiency and effectiveness of the different types of clinics.

The above description illustrates how in Eastern Metropolitan Santiago a net-

work of preventive and treatment services for adolescents is emerging. Similar efforts are under way throughout Chile. We believe this network is meeting a new health need that will become increasingly important as time goes on.

## HEALTH PROMOTION

The array of activities described above is grounded in the basic assumption that good biological, psychological, and social health must be fostered and promoted—a much broader goal than simply treating disease. Working on health promotion among adolescents is of prime importance, since this population can be reached prior to the development of many illnesses. Furthermore, healthy habits acquired while young can last throughout life. Thus, alcohol and other substance abuse problems are preventable, but more information is needed about effective intervention technologies.

Adolescents' own perceptions of their problems and health needs also have to be evaluated. Our recent data show that adolescents are much more concerned about their future, ecology, and reproductive health matters than about drugs. Drug use is a concern to just one-third of adolescents and is not often self-reported as a health-endangering behavior.

### Factors Associated with Alcohol and Drug Abuse

A regional student survey in La Serena, Chile, found that family characteristics were important factors correlated with excessive drinking among adolescents. Such factors included mother working outside of the home, father out of work, large family (more than six), children abused, parents frequent users of alcohol or other chemicals, and one or both parents away from home. Other

characteristics of young alcohol abusers were below-average academic performance, lack of participation in sports, police record, nutritional deficiency, and frequent playing of electronic games.

Many other studies have confirmed that family problems seem to be closely associated with heavy, chronic, or excessive alcohol or other drug use among adolescents (19). We have used the Family Apgar, a screening questionnaire devised by Smilkstein (20), to measure perception of family functioning in different areas, including communication, support, decision-making skills, sharing of free time, and emotional expression. In our study (21), this questionnaire discriminated adequately ( $p < 0.001$ ) between students in the general population and those who were attending some of the primary health care clinics with health complaints of any sort (Figure 3).

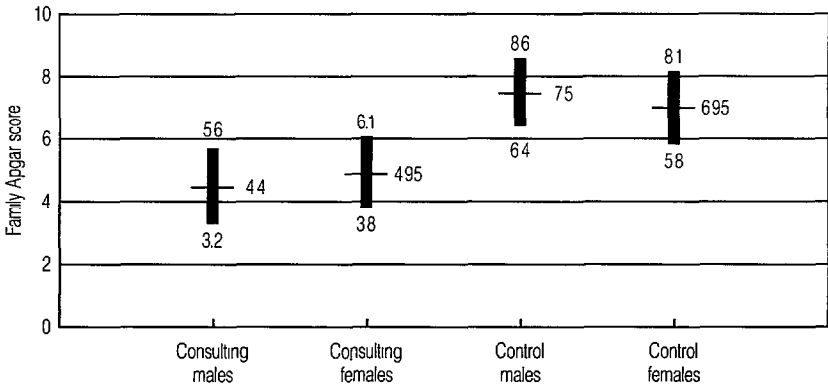
Climent, in his pioneering research in Cali, Colombia, measured the prevalence of chemical abuse among adolescents and then studied the risk factors associated with that abuse. In a random sample of 1,937 students in 54 schools in that city, the most statistically significant factors related to drug abuse were a distant relationship with parents, lack of paren-

tal interest, parental permissiveness, and, among male users, impulsiveness (22). A more extensive list of risk factors, developed by Newcombe (23), includes low grade-point average, low religious commitment, early alcohol use, poor self-esteem, depression, poor relationship with parents, lack of law abidance, sensation seeking, perceived peer drug use, and perceived adult drug use.

Based in the Cali study, Climent et al. (24) have designed and validated a 53-item scale (the Drug Risk Scale, DRS) that has good sensitivity and specificity in determining risk among adolescents of future drug use. This type of instrument is promising for secondary prevention interventions. (See the article by Climent et al. on pages 77-85 for more information on these studies.) Most studies, including ours (25), have found that the quality of family life seems to be a crucial factor in determining whether or not excessive drug consumption appears.

### The Health Promotion Action Matrix

An interesting model for systematizing the data cited above has been proposed by Perry (26), who discusses health-protective and health-endangering be-



**Figure 3.** Ranges and means of Family Apgar scores for adolescents seen at primary health care clinics versus control group of adolescents, Santiago, Chile, 1986.

haviors. In a prospective study in Denver, Colorado, Jessor and Jessor (19) showed that problem behaviors tend to cluster in the same subgroup of adolescents.

Perry's model also opens the possibility of intervention. The task of health promotion involves fostering health-protective behaviors and discouraging health-endangering ones among adolescents. Perry proposes interventions directed to the levels of individual, family, school, community, and society. At each of these levels, health promotion activities can be developed. Table 1 presents the design of these interventions. We have found this scheme to be a useful one from which to select the specific activities that are appropriate and feasible in different places and situations.

An important decision to make in planning programs is whether to cover all adolescents or to concentrate on those at highest risk. The first approach has more visibility, but is not cost-effective since too much time and effort are expended on children who are not at risk and not interested in the subject. We have chosen the approach of identifying children at risk through school health programs, based on the following rationale:

- Preadolescents are an appropriate group toward which to target interventions since they have not yet begun to use drugs (the average age of use onset being 14.5 years).
- In our study area, 98% of the children attend school, and hence are a "captive" population.
- There is a strong tradition of cooperation between teachers and health professionals, and many joint health and education campaigns have been launched in the past.

### The SSMO/UCh Integrated Health Promotion Program

At the University of Chile, we have recently redesigned our local program for the Servicio de Salud Metropolitano Oriente. The following is our five-tiered approach, with each tier of the plan of action including various specific activities.

- Development/maintenance of an adolescent health care system;
- Active screening of adolescents at risk to involve them in anticipatory life-planning workshops;

**Table 1.** Health promotion activities for adolescent substance-abuse prevention.

Level	Activities to promote health-protective behaviors	Activities to discourage health-endangering behaviors
Individual	Daily fitness routine Participation in sports	Avoidance of smoking/drug use Delaying onset of drinking behavior
Family	Joint use of free time Enhanced family communication	Avoidance of chemicals at home Parents campaign against drunk drivers
School	After-school programs Health curricula Emotional education	Adoption of policies against drug use Screening programs
Community	Recreational programs Job training Speakers bureau	Provision of: drug information services hotline crisis clinics adolescent health clinics
Society	Media promotion of anti-drug message Drug-free environment	Drafting of legislation Anti-drug policies

- Involvement of parents through family life-cycle crisis workshops;
- Commitment of community decision-makers through "gate-keeper workshops";
- Societal involvement through a media alcohol awareness week.

**Adolescent health care system.** The existing array of primary care clinics with special adolescent units is staffed by fellows in adolescent medicine, pediatric and psychiatric trainees, psychologists and social workers, and medical, dental, and nursing students. A standardized clinical record is used, and the data thus gathered are fed into a computerized data base for continued research and evaluation of the program. Links with the tertiary level have been reinforced, with back-up clinical units in the hospitals supporting the primary level of care.

**Screening activities.** Anticipatory life-planning workshops have been implemented in four school systems. A screening scale (such as the Climent DRS) will be routinely used, as well as surveys of consumption of alcohol and other drugs. Cases detected will be screened by school counselors and referred, as necessary, for in-depth evaluation to the local adolescent health care clinic. The risk factor and alcohol/drug use surveys will be analyzed yearly to establish a system to monitor the prevalence of student problems and health-endangering behaviors.

**Family health support.** Family life-cycle workshops will be offered for teachers and parents of children identified as at high risk. These workshops focus on common family life crises (such as disease in the family, alcohol and other drug abuse, unemployment, early pregnancy, marital strife, etc.) and on problem-solving and coping techniques, and will

attempt to clarify the consequences of family dysfunction on adolescent health. Cases needing individualized attention will be referred to the local mental health units of the primary care clinics. Adequate registers will be kept of the number and type of cases seen.

**Local community involvement.** Techniques developed by the World Health Organization will be used at the community level. Key decision makers in each local community will be identified, and a "gate-keeper" workshop, as developed by Friedman *et al.* (27), will be carried out in each site. As mayors, chiefs of police, clinic directors, local judges, priests, and other youth leaders become acquainted with this subject, it is hoped they will gain an awareness of adolescent health needs, get involved with local youth, and better prioritize upcoming activities. They will be encouraged to relate their ideas to the integrated program described above, but also to be as creative and proactive as possible in developing independent views and plans.

**Societal-level activities.** In countries with a centralized government, national policies very directly affect local communities and individual life. Chile has a unitary (as opposed to federal) governmental structure. This system, plus the fact that our work has been in the capital of the country, makes necessary to some degree actions at the national level in order to impact the local scene. As an example, members of our group have been active in organizing a network of adolescent health groups and have also acted in a technical advisory capacity to the Chilean Ministry of Health. In this specific program, we have attempted to work with the news media on the idea of an Alcohol Awareness Week. During that week, special attention would be paid to alcohol-related issues on television, in radio



broadcasts, and in the written press. Access to a "speakers bureau" would be offered to journalists and television stations in an attempt to influence the public to take a stand regarding this problem.

This is just a brief summary of our present plan of action. It represents only one possible combination of activities which in our case appears to be timely and feasible.

## Implementation Issues

The development of this wide array of activities represents a complex task, and before it can be implemented, different aspects of its feasibility need to be analyzed. Some of these are as follows:

**Technical feasibility.** Preventive interventions have not been systematically evaluated. It is not possible to offer today a "behavioral vaccination" to avoid the onset of abusive intake of drugs. However, there is enough information to assert that children coming from alcoholic families, or from structurally disrupted ones, tend to begin to use alcohol or other substances earlier and in a more dangerous manner than children not affected by such situations. We therefore postulate that interventions that reinforce family problem-solving abilities could have a beneficial effect on this problem. An adequate evaluative design is essential to complement this plan.

**Political feasibility.** Societal denial has been a powerful deterrent to action in this area. Alcoholism and other substance abuse-related behaviors are so ingrained in our social fabric that decision makers very often are not aware of their deleterious impact. This situation is dramatically clear in many countries of the Americas today. Therefore, it is important to involve policy makers at different levels in the recognition of and planning

of action against these problems. There is also a need to be realistic about the appropriateness and timeliness of some approaches. It is sometimes better to wait and collect information until the political scene becomes more open to action in certain areas. When those "windows of opportunity" arise, the previously prepared ammunition can be utilized.

**Financial feasibility.** Prevention programs are not as expensive as long-term treatment. However, their cost should not be underestimated. The need to involve experts and many types of professionals, as well as to prepare careful and well-designed training programs, can require extensive resources. Fund-raising for such activities is a complex task that must begin with adequate financial analysis and planning. We have been able to obtain local (municipal and private), university, and central governmental funding, as well as some external resources, to develop our preventive activities. The importance of volunteer associations, self-help groups, and, especially, the adolescents themselves cannot be overstated.

**Administrative feasibility.** Intersectoral activities frequently trigger jurisdictional disputes. It is clear that the task of drug abuse prevention does not belong to any specific group or profession, and that there is room for everyone who wants to help. The challenge of the alcohol and drug dependence epidemic has to be met by groups with broad community representation, supported by specific task forces with well-delineated mandates.

## CONCLUSIONS AND RECOMMENDATIONS

Quantitatively, the most serious drug abuse problems in the Region of the

Americas are alcohol and tobacco use. Cocaine and inhalants present other serious challenges. Groups at greatest risk are composed of persons who are deprived in various ways. Families and peers are related both to the cause and solution of the problem. Family disruption and parents' chemical consumption and permissiveness correlate with a high incidence of drug use among adolescents. Other risk behaviors that cluster with drug use are early sexual experience, thrill seeking, impulsiveness, and risk-taking behaviors in general.

Preventive interventions should target high-risk groups. Several approaches have been utilized in the past, without clearcut success. Climent's DRS is a promising and up-to-date screening instrument. Peer-led approaches are also seen as a positive and eventually fruitful method of intervention (28). There is a need to both develop creative interventions and to evaluate them systematically. The strategies selected must consider cultural factors: approaches that work in one place can be inappropriate somewhere else. International collaboration can be very helpful in disseminating information about alternative approaches, as well as in developing collaborative evaluative trials. The task at hand is enormous and needs to be tackled by means of the development of networks both within countries and between countries that are facing similar threats.

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