

Human immunodeficiency virus, AIDS, and drug consumption in South America and the Caribbean: epidemiological evidence and initiatives to curb the epidemic

Mariana A. Hacker,¹ Monica Malta,¹ Melissa Enriquez,² and Francisco I. Bastos¹

Suggested citation

Hacker MA, Malta M, Enriquez M, Bastos FI. Human immunodeficiency virus, AIDS and drug consumption in South America and the Caribbean: epidemiological evidence and initiatives to curb the epidemic. *Rev Panam Salud Publica*. 2005;18(4/5):303–13.

ABSTRACT

Objective. *The paper reviews data on drug use in relation to the spread of human immunodeficiency virus and AIDS in South America and the Caribbean.*

Methods. *Information was gathered by thoroughly reviewing major bibliographic databanks, web sites of international institutions and regional networks working with substance misuse or human immunodeficiency virus and AIDS, and abstracts from conferences and meetings.*

Results. *Although some gaps remain, a growing body of evidence documents the significant role of injected cocaine in the Brazilian and Southern Cone epidemics. The Caribbean and the Andean areas have thus far been spared in large part from the spread of injection drug use and its consequences, but the situation has been changing in Southern Cone countries towards a higher prevalence of harmful injection habits. Additional challenges have been posed by the increasing availability of heroin in the Andean Area and the abuse of crack cocaine and its impact on the sexual transmission of human immunodeficiency virus in many cities. Harm reduction strategies have been established in most areas of Brazil and are gaining momentum in Argentina. Other countries in the Region still face serious limitations due to restrictive legislation and lack of broader support.*

Conclusion. *Greater participation of Latin American and Caribbean countries in research protocols and continued debate on both successful and failed experiences should be encouraged in order to minimize existing barriers to the full adoption of effective measures to curb the human immunodeficiency virus and AIDS epidemic in this Region.*

Key words

South America; Caribbean; drug use; cocaine, human immunodeficiency virus; AIDS.

¹ Oswaldo Cruz Foundation, Rio de Janeiro, Brazil. Send correspondence and reprint requests to Mariana A. Hacker, Health Information Department, Oswaldo Cruz Foundation (FIOCRUZ), Pavilhão Haity Moussatché, #229, Avenida Brasil, 4365, Manguinhos 21045-900, Rio de Janeiro, Brazil; telephone: (55) 21 3865 3231; fax: (55) 21 2270 2668; e-mail: mariana@cict.fiocruz.br

² Stanford University School of Medicine, California, United States of America.

Epidemiological studies addressing the intertwined epidemics of injection drug use, human immunodeficiency virus (HIV) and AIDS in South America and the Caribbean are still fragmentary. Health professionals and policy makers face great difficulties in assessing the initiatives aimed at curb-

ing the spread of HIV in different countries of the Region (1) and providing management and care to HIV-infected drug users (2).

Given these obstacles, a remarkable achievement has been the inclusion of South American cities in large, multi-center studies such as those sponsored

by the World Health Organization (WHO). Efforts to better understand the patterns of illicit drug abuse and risk behaviors for HIV and AIDS (hereafter HIV/AIDS) in South America began with a multicenter study sponsored by WHO in 1989–1990, the WHO Drug Injection Study Phase I, which was conducted in 13 cities including Rio de Janeiro and Santos, Brazil. This study was the largest international project of its kind at that time. Apart from the wealth of data collected in each of the participating cities, the study contributed significantly toward developing research methods, informing national policies, establishing international collaborative networks and placing drug injection, HIV and related health policy issues on international and local agendas (1).

The WHO Drug Injection Study Phase I resulted in recommendations to develop methods for rapid assessment, focus on “new” HIV epidemics and other health consequences of injection drug use (such as hepatitis B and C, and overdoses) and to narrow the gap between research and the development of policies and interventions. These recommendations shaped the design of the WHO Drug Injection Study Phase II, which was implemented in 2000. The study involved 14 cities in 13 countries, including four cities in South America: Rosario City (Argentina), Santos and Rio de Janeiro (Brazil), and Santa Fe de Bogotá (Colombia). Results from the WHO Phase II study pointed to the importance of harm reduction interventions targeted for injection drug users (IDUs), and helped to strengthen low-threshold approaches targeted for IDUs in Brazil, Argentina and Colombia (1, 3–6).

By thoroughly reviewing data from WHO studies, major databases and nonindexed literature in English, Spanish and Portuguese, we were able to discern major epidemiological trends and identify achievements and drawbacks in the field of prevention.

METHODS

This paper reviews a large body of information that was gathered from

different sources. Emphasis has been placed on peer-reviewed papers, posters and oral presentations from major conferences and nonindexed manuscripts and reports.

Two major electronic databanks, one international (Medline, www.ncbi.nlm.nih.gov) and one regional (SciELO, Scientific Electronic Library Online, www.scielo.br) were thoroughly explored, using key words such as “AIDS/HIV,” “drug use,” “Latin America,” “South America,” and “Caribbean,” the name of each of the countries in the Region, and key words in Spanish and Portuguese for the SciELO database.

Other major data sources and websites we searched were SIDALAC (Regional AIDS Initiative for Latin America and Caribbean, www.sidalac.org.mx); UNAIDS (Joint United Nations Programme on HIV/AIDS, www.unaids.org); IHRA (International Harm Reduction Association, www.ihra.net), and its official journal *The International Journal of Drug Policy*; WHO (www.who.int); and RELARD (Rede Latino-Americana de Redução de Danos/Latin-America Harm Reduction Network, www.relard.net).

To examine recent studies, we reviewed abstracts from the 15th International Conference on the Reduction of Drug Related Harm (2004 April 20–24, Melbourne, Australia) in the abstract book, as well as abstracts from the 14th International AIDS Conference (2002 July 7–17, Barcelona, Spain), available at www.aids2002.com.

Finally, information about survey studies was retrieved from the US Census Bureau web site (<http://www.census.gov/>). Additional information was obtained from personal contacts and networks, and the private library and files of the senior author (FIB).

We devoted particular attention to papers published in peer-reviewed journals. Additional information was considered reliable when data were extracted from surveys carried out with appropriate methods (i.e., appropriate recruitment and HIV testing and proper use of epidemiological and statistical tools), as described in the survey’s abstract or in compliance with the criteria of the sponsoring or

coordinating institutions (e.g., PAHO, the Brazilian Ministry of Health, etc.).

Given the current status of information in South America and the Caribbean in the field of HIV/AIDS among drug users, it was impossible to carry out a systematic review in accordance with rigorous rules such as those of the Cochrane Library (<http://www.update-software.com/publications/cochrane/>).

Despite the undeniable limitations related to the relative lack of information due to deficiencies in accessibility and dissemination, preliminary efforts to amass widely dispersed information are pivotal for improving local health information systems, guiding future research, and fostering innovative, evidence-based interventions.

RESULTS

Epidemiological evidence

Overview. The dynamics of HIV/AIDS in South America and the Caribbean has been remarkably heterogeneous. Countries such as Bolivia (Andean Area), Paraguay (Southern Cone) and most countries from the Central American isthmus have been relatively spared by the epidemic so far. On the other hand, the AIDS epidemic has spread extensively in highly populated countries such as Brazil and Argentina, and especially in some small countries such as Haiti, the Bahamas, and French Guiana (7).

The role of IDUs and crack cocaine users in the HIV/AIDS dynamics in these regions is quite distinct. In countries where injection drug use has been extensive, such as Brazil and Argentina, there are clear regional patterns, which are described in detail for Brazil. In other countries where the consumption of drugs through injection remains uncommon, HIV transmission occurs predominantly through sexual transmission. In many Caribbean countries the use of illicit drugs such as crack and powder cocaine is frequently linked to the spread of HIV through unprotected sexual intercourse and the sex trade (8).

Because of the very heterogeneous dynamic of HIV/AIDS and the distinct role of injection drug users, as well as the striking socioeconomic and cultural contrasts in South and Central America and the Caribbean, the results are presented here according to a rough geographical division into four areas: The Caribbean and Central America, Brazil, the Southern Cone, and the Andean Area. Information from different HIV seroprevalence surveys and data about the proportional number of AIDS cases among IDUs in some areas of the Region are presented in Tables 1 and 2, respectively.

The Caribbean and Central America.

Although located in the geographic space of the Caribbean and Central America, Puerto Rico has a unique drug scene. The conspicuous presence of injected cocaine is strongly associated with the local HIV/AIDS epidemic. Because of its socioeconomic situation, cultural background, and close ties to the United States, its regional pattern of IDU-associated HIV infection is more similar to that of the patterns in South or Central America or the Caribbean. This similarity was clearly shown in a study of Puerto Rican injection drug users who were interviewed in New York and Puerto Rico. Strong similarities in influences on high-risk behaviors were found in both settings (9). In the same vein, molecular epidemiology findings have convincingly shown that the continental United States and Puerto Rico have been affected by a common epidemic, indicating infection by a shared HIV-1 strain. This pattern may be due to continuous human traffic or (a less likely explanation) may indicate a similar evolution of a common source virus (10). For the reasons mentioned above, data from Puerto Rico will not be reviewed in detail in the present paper.

For decades the Caribbean has been a traditional transshipment route for cocaine from Andean coca-producing countries to the markets of North America and Europe. Since the 1970s and 1980s, the Caribbean drug scene has

TABLE 1. Selected HIV seroprevalence surveys of injection drug users in South America and the Caribbean, 1988–2005

Country	City	Year	Seroprevalence (%)	Reference
Argentina	Not specified	1988	27.0	47
Argentina	Buenos Aires	1995	80.0	47
Argentina	Rosario	1998–1999	55.0	48
Argentina	Buenos Aires	2001	46.0	74 ^a
Brazil	Itajai	1998	78.0	27
		2000–2001	31.0	
Brazil	Porto Alegre	1998	48.5	27
		2000–2001	64.3	
		1991–1992	63.0	
Brazil	Santos	1994–1996	65.0	3
		1999	42.0	
Brazil	Rio de Janeiro	1990s	25.0	32
Brazil	Rio de Janeiro	2000–2001	8.0	6
Colombia	Bogota	1999	<2.0	5
Nicaragua	Managua	Not specified	6.0	14
Peru	Part of a national survey	1994–1995	13.0	75 ^a
Uruguay	Not specified	1991–1992	76.5	76 ^a
Uruguay	Montevideo	1997	24.4	77 ^a

^a Additional reference not discussed in the text.

been noted for widespread cultivation and consumption of cannabis (a key component of the Rastafarian culture) and the incidental use of cocaine. However, since the end of the 1980s, crack cocaine has become popular in many Caribbean islands in the French Caribbean (11) and the Bahamas (12). Similar increases in cocaine consumption (by smoking, inhaling or both) appear to be occurring in Central America (13).

According to the available literature and anecdotal reports, the injection of cocaine is still rare throughout the Caribbean, and presently has no meaningful role in the dynamics of the regional HIV/AIDS subepidemics. However, the role of crack and its close relationship to the sex trade has contributed to the spread of HIV through heterosexual transmission (8, 12).

TABLE 2. Proportional number of AIDS cases among injection drug users in some areas of South America and the Caribbean, 1987–2003

Area	Year	(%)	Reference
Costa Rica and the Bahamas	To 2001 ^a	<1.0	7
Brazil	To 2003 ^a	22.9 (men) 11.9 (women)	20
Southern Cone	Late 1990s	29.0	27
Argentina	1987	10.0	44
	1989	23.0	
	1991	40.0	
	1993	44.0	
Argentina	To 2001 ^a	42.0	46
Uruguay	2001–2003	25.0	45
Chile	To 2001 ^a	05.0	4

^a Accumulated AIDS cases among injection drug users.

The drug scene seems to be changing in the Central American isthmus in recent years. The relevance of the shared injection of illicit drugs (especially cocaine) has been increasing in the AIDS epidemic in Nicaragua (7). Preliminary data from a cross-sectional study were presented at the 2000 Latin American AIDS Forum (14). The 50 drug users interviewed for the study reported cocaine use amidst other miscellaneous psychoactive substances. Although cocaine has most often been snorted or smoked, the habit of injecting cocaine was found to be quite prevalent in this small sample of polydrug users, with 50% of them reporting having ever injected cocaine. The point prevalence of HIV infection was found to be 6.0% and should be evaluated further in larger samples (14).

According to recent data compiled by UNAIDS, the role of injection drug users is still negligible in Costa Rica and the Bahamas, accounting for less than 1% of the AIDS cases reported as of December 2001 (7).

Brazil. Several studies (15–18) have shown that Brazil, because of its continental size and marked social and cultural heterogeneity, harbors many different HIV subepidemics. Injection drug users, however, have thus far had a negligible role in the AIDS epidemic in the less industrialized areas in northeastern Brazil, with the exception of the state of Bahia (19), the southernmost state in this region.

Among adults (persons 14 years of age or older in the Brazilian National AIDS Register SINAN-AIDS), 22.9% of all cases of AIDS in men reported to the Brazilian Ministry of Health as of the end of 2003 were IDUs. The figures are substantially lower for women, among whom this proportion corresponds to 11.9% of all female cases reported in the same period (20). However, IDUs have played a central role in the HIV/AIDS subepidemic in the industrialized southeast, especially in São Paulo state, and, more recently, along the southern coast from São Paulo to the southern border of Brazil (18).

In its beginnings, the IDU-associated HIV/AIDS epidemic in Brazil broadly followed the main cocaine transshipment routes from the western border to the main coastal ports in the southeast (16, 18). A similar phenomenon was described for heroin routes in Asia (21). The transshipment cocaine routes—linking the west and the south/southeast of the country—benefited from the best Brazilian highway network.

As shown by Kalichman (22), Grangeiro (23), and Fonseca and Castilho (24), IDUs are concentrated in the richest socioeconomic regions of Brazil, but the vast majority of them belong to the poorer and less educated strata of Brazilian society. Injection drug users live mainly in the impoverished areas ringing Brazil's richest cities, such as São Paulo (23).

International research indicates that IDUs are a very mobile population (25), which often has a dramatic impact on the spread of blood-borne pathogens. A unique example is the occurrence of two outbreaks of secondary malaria among IDUs in São Paulo state, which had been free of malaria for decades. These outbreaks were attributed to the migration of IDUs from distant areas in the country (i.e., the Amazonian basin and tropical rainforest) where malaria is still endemic. Most of these IDUs were co-infected with HIV (26).

Cocaine trafficking, cocaine consumption and the spread of HIV and other blood-borne infections became the hallmark of the Brazilian southern coastal subepidemics in the late 1990s, with explosive IDU-related HIV epidemics in some municipalities located along the coast of the states of Santa Catarina and Rio Grande do Sul (18). In some municipalities in this coastal strip over 50% of all AIDS cases have been reported among IDUs (20). This high incidence rate explains at least part of the rapid, sustained spread of HIV in the south, which affects a large number of women (most of them partners of IDUs) and their children, and contributes to the slower decline in AIDS-related deaths in comparison to other regions of Brazil (18).

An analysis of two surveys (1998 and 2000–2001) of IDUs from the two southern municipalities of Itajaí and Porto Alegre found that the prevalence of HIV increased in Porto Alegre, the southernmost metropolitan area of Brazil, from 48.5% to 64.3%, whereas it declined in Itajaí from 78.0% to 31.0%, where the epidemic became established earlier (27). In contrast to recent findings from southern municipalities, the epidemic has been diminishing in the southeast since the second half of the 1990s, after a substantial increase in the late 1980s (3, 6, 28). Data from two recent incidence studies corroborated inferences from serial seroprevalence surveys and ecological analyses. Whereas the incidence of HIV among cocaine users was found to be 5.3 per 100 person-years at risk in a cohort study in Porto Alegre (29), it was estimated to be 0.71 in a sample of cocaine users of similar characteristics in São Paulo (30).

In the Santos Metropolitan Region of São Paulo state, three cross-sectional studies of IDUs have been conducted. The seroprevalence of HIV was 63% from 1991 through 1992, 65% from 1994 through 1996, and 42% in 1999 (3). Analyses with space-time diffusion models documented that the spread of HIV among IDUs in the state of São Paulo followed a localized growth pattern, and thus suggested that the very rapid spread of HIV among IDUs in this state, especially at the end of the 1980s, was subsequently overtaken by a larger secondary spread of heterosexually acquired infections (31).

Rio de Janeiro, the second largest Brazilian city and port, has a lively drug scene where cocaine is consumed typically by snorting. Interestingly, its HIV/AIDS epidemic has not been strongly influenced by the rather small population of IDUs. As reported elsewhere (32), HIV seroprevalence rates among IDUs in Rio de Janeiro had been high by international standards (approximately 25%) in the early 1990s, but never reached the catastrophic levels observed in Santos (33). Over the years AIDS cases attributed to IDUs have comprised no more than 6% of all cases reported

in Rio de Janeiro, and are currently decreasing.

A series of papers by our group highlights the auspicious finding of an apparent decline in new HIV infections among IDUs from Rio de Janeiro (6, 28, 34). Using a sensitive/less sensitive HIV testing algorithm, we did not find a single new infection in the blood samples from IDUs collected between 1994–1996 (34) and estimated HIV seroincidence as 0.76% for IDUs recruited in 2000–2001 (28). The prevalence of HIV was found to be substantially lower (~8%) in the 2000–2001 survey (WHO Phase II Study) than in previous surveys (32), and low injecting frequencies have been observed among new injectors (6).

Recent data from Salvador, Bahia, have also pointed to a substantial decline in the prevalence of HIV among IDUs (35). Some studies have highlighted the high prevalence of sexual risk behaviors and HIV infection rates among crack users, such as impoverished commercial sex workers from São Paulo (36), or among gay men enrolled in a cohort study in Rio de Janeiro (37). Our provisional conclusion is that Brazilian cities harboring mature (i.e., prone to saturation) HIV epidemics in their IDU population, in which prevention programs have been fully implemented (as in Rio de Janeiro, Santos, and Salvador), seem to be experiencing a substantial decline of their AIDS epidemic among IDUs.

A key aspect addressed by Brazilian research has been the transition between routes of cocaine self-administration (38, 39). As shown by these two Brazilian studies, cocaine transitions are very common and take place in different directions. Transition may occur from riskier modes of administration to safer ones, and vice versa, and can include spontaneous abstinence periods as well as frequent relapses. A study undertaken in São Paulo in 1996–1997 found that 87% of the patients began using cocaine by snorting and 74% subsequently underwent a transition of route, with 68% switching to smoking and 20% to injecting. Many cocaine transitions are toward routes associated with a higher dependency potential

and increased HIV risk behaviors (38). A recent qualitative study in São Paulo found changes in the administration of cocaine in two directions: abandonment of injecting in favor of sniffing and smoking, and the increasing use of crack cocaine in younger and lower-income groups (40).

The Southern Cone. Of the subregions of South America and the Caribbean, the Southern Cone together with Brazil has reported the largest number of AIDS cases among IDUs. Injection drug use accounted for 29% of all reported AIDS cases in the Southern Cone in the late 1990s (41).

The impact of the Mercosul free trade zone on Southern Cone commerce and the mobilization of people between and within countries in the Southern Cone and southern Brazil have been immense, and have increased in recent years. The trade agreement has had an undeniable impact on the flow of all commodities. Despite the efforts to control transshipment of illicit commodities such as drugs, weapons, and ammunitions, illicit commerce will continue to challenge customs officials and police agencies in the years to come with expanding criminal networks, money laundering, and the growing availability of illicit drugs. Those responsible for formulating and implementing public policies and those health professionals who deal with drug users and HIV/AIDS must address the renewed challenges of very dynamic drug scenes.

Argentina. The role of IDUs in Argentina's HIV/AIDS epidemic increased substantially from the mid to late 1990s, following a pattern similar to South European countries where IDU is the most important exposure category (42). Argentina's IDU subepidemic is chronologically delayed relative to Brazil. The first AIDS case in an IDU was reported in Brazil in 1983 (23), but did not occur in Argentina until 1985 (43). Unlike Brazil, where the proportion of AIDS cases attributable to IDUs reached a plateau of 20%–

21% at the beginning of the 1990s and then declined (with the exception of the southern coast), AIDS cases among IDUs in Argentina increased steadily until the mid-1990s (from 10% of all AIDS cases in 1987 to 23% in 1989, 40% in 1991 and 44% in 1993). Argentina's IDU subepidemic plateaued in the second half of the 1990s (44), but still represents more than 40% of all AIDS cases in the country (45).

As of March 2001, approximately 130 000 people had HIV/AIDS in Argentina. From the roughly 20 000 AIDS cases reported among adults (those aged 13 years old or more) up until 2001, 42% of the total and 46% of the cases in men were IDUs (45). The national AIDS incidence rate in 2000 was 48.9 per million (46).

A review of 22 studies carried out between 1987 and 1999 found HIV prevalence rates that ranged from 27% (a study carried out in 1988) to 80% (a study conducted in 1995) among IDUs. This finding suggested an increase in HIV infection rates during that period, although this conclusion should be interpreted with caution in light of the heterogeneous nature of the sources and study designs (47).

A study in Rosario City in 1998–1999 with the Rapid Assessment and Response methodology developed by WHO pointed to disquietingly high levels of HIV infection (point prevalence of 55.0%) and serious deficiencies in terms of medical and psychological support for drug-related psychosocial harm and HIV/AIDS. Frequencies of needle sharing remained unacceptably high (70%) in this population, which consisted mainly of cocaine injectors (48).

Another study carried out in Buenos Aires in 2000–2001 interviewed and tested street-recruited IDUs for different blood-borne infections. The results yielded an HIV seroprevalence of 44.3%. Only 6.5% of the HIV-infected IDUs were not co-infected with other viruses; 88.3% of them were co-infected with hepatitis C virus (HCV) and 68.6% with hepatitis B virus (HBV) (49). A survey carried out in four different regions of Argentina (Córdoba, Rosario, Mar del Plata, and

Buenos Aires) corroborated these findings, and reinforced the disquieting picture of high levels of sharing of injection equipment and high rates of HIV infection among IDUs from all four sites (50).

In Argentina and Brazil, IDUs have played a central role in the impoverishment of the AIDS epidemic, combining the vulnerability of marginalized and underserved populations with the negative impact of a wide-ranging economic crisis and political turmoil. Most new AIDS cases in Argentina, as in Brazil, have been reported among people living in poor communities who have received less formal education and have higher unemployment levels. It is in this stratum that harmful drug usage patterns are commonly found (51). The ecological analyses were corroborated by a recent study of 174 HIV-positive heterosexuals living in Buenos Aires in 1999 (52). The study points to high levels of drug injection (41.5% of the men interviewed reported having injected illicit drugs), frequent sharing of injection equipment (over 90% among those who reported having ever injected), and a high prevalence of unprotected sex and of sexually transmitted and blood-borne infections among those with an IDU history. An association was found between reported exchanges of sex for money, drugs or food and the use of illegal drugs. The self-injection of illicit drugs was found to be highly prevalent among men from lower educational strata (52).

Uruguay and Paraguay. In Uruguay and Paraguay, the pattern of the HIV/AIDS epidemic among IDUs broadly follows that of Argentina, although in both countries, and in particular Paraguay, the epidemic has evolved more slowly than in Argentina and Brazil (53). The spread of HIV among IDUs in Paraguay has been slower, probably because of the smaller size of their high-risk IDU populations and the smaller number of inhabitants in general. However, its role as a transshipment route seems to be increasing along with the numbers of heavy drug

users or polydrug users (54). In both countries the current drug scene combines "traditional" patterns of drug use, e.g., over-the-counter psychopharmacological drugs, cannabis products and inhalants (which are of particular concern in Uruguay) (55), with the relatively new habits of injecting cocaine and smoking crack (56).

More recently, very high HIV infection rates have been reported in Uruguayan IDUs, with rising infection rates in their noninjecting sexual partners and children. In 2003, 25% of all new AIDS cases were reported among IDUs, and 45% of these cases occurred among individuals aged 15–24 years (45). Further analyses pointed to an even more worrisome picture. Among those aged 15–19 years, infections among IDUs accounted for 81% of all AIDS cases in this age bracket (57). Precocious initiation into illicit drug use was corroborated by an empirical study in Montevideo in 1995–1996, which showed that most people started using drugs between the ages of 10 and 14 years (56).

The pattern of drug use in Uruguay has changed, with a steady increase in the number of drug-using women and a tendency for illicit drug use to commence at very young ages. Of special concern is the increasing number of HIV infections among pregnant women and the newborns of drug-injecting mothers (58).

The Andean Area. The availability of coca and its derivatives, such as cocaine powder and coca paste, is not the only factor that determines its abuse. As observed for different regions of Brazil (18), drug-using scenes tend to be distinct from one another since they represent a combination of different derivatives and consumption habits. In the Andean Area, powdered cocaine is widely available but injection is still rare. In these countries the traditional habit of chewing coca leaf has coexisted, especially after the 1980s, with the smoking of raw coca paste and *bazuco* (a blend of coca and marijuana/tobacco leaves) in socially disadvantaged strata, and the inhaling of cocaine powder among the middle and higher

social strata. However, the former clearly predominates in rural areas and the latter in larger cities (59).

In the late 1990s a decline in the use of smoked coca paste and an increase in the availability of heroin and powder cocaine were observed in Colombia. This trend is believed to be due in part to the renewed strategies of drug cartels, which serve to increase the availability of low-quality water-soluble drugs (60, 61). After 12 years of the Colombian epidemic without a single recorded case of AIDS among IDUs (1983–1995), 33 new cases of AIDS were reported among IDUs in 1996–1997 (61).

The changing nature of the Bogotá (Colombia) drug scene was first reported by Ross et al. (62) on the basis of data from an intervention project carried out in the downtown area of Santa Fe de Bogotá. The authors studied a group of polydrug users, some of them injectors with high levels of needle and syringe sharing. Risky sexual practices, including unprotected sex among multiple sexual partners and frequent engagement in commercial sex work, were common among study participants (62).

More recently a comprehensive study was carried out in Santa Fe de Bogotá (5) as part of a WHO Multicenter Study. The Colombian study consisted of two complementary components: 1) a rapid assessment and response component and a survey to obtain sociodemographic and behavioral data, and 2) determination of the seroprevalence of HIV, HBV and HCV). This study documented a dynamic drug scene with a sizeable proportion of people recently engaged in the habit of injecting cocaine, alcohol and heroin. Although the interviewees—most of them polydrug users—reported low injection frequencies and the seroprevalence of antibodies against HIV, HBV and HCV was low (below 2%), high frequencies of direct and indirect sharing of drug injection paraphernalia and unprotected sex were evident (5).

Within the context of the increasing availability of heroin (which has thus far been too expensive for most consumers), the abundance of cheap cocaine, and the virtual absence of preven-

tion and treatment programs other than those oriented toward strict abstinence, one may expect an increase in the number of injectors and in infection rates among them and their sexual partners. Concerted efforts should be implemented to avert an escalation in hazardous polydrug use and drug injection, and to forestall the consequent spread of HIV/AIDS and viral hepatitis.

Bolivia has one of the lowest HIV prevalence rates in the Andean Region, with IDUs playing a negligible role (less than 3% of reported AIDS cases) in the local HIV/AIDS dynamics thus far (7). In Peru, comprehensive surveys found fewer than 150 active IDUs among a sample of 141 000 individuals (63). Recent data compiled by UNAIDS corroborated these findings, and showed that IDUs play no relevant role in the Peruvian subepidemic (7). Ecuadorian data point to an incipient AIDS epidemic in which the role of IDUs is still negligible (7). Data are scant for Chile, where IDUs contributed to 5% of all AIDS cases reported up to 2001 (4).

However, the pattern has been changing in Venezuela. Although the Venezuelan AIDS epidemic is still limited in scope (7), recent findings from molecular epidemiology studies point to a putative bridging phenomenon between Venezuela and the Caribbean AIDS subepidemic (64). The extent to which this bridging phenomenon will affect the Venezuelan epidemic, and the role of the small population of Venezuelan IDUs in the epidemic in the years to come, are unknown and should be explored in future studies.

Efforts to curb the HIV/AIDS epidemic: drug policies and prevention in South America

In 2000 the HIV Prevention among Injecting Drug Users in the Southern Cone regional project was launched, with the participation of national AIDS programs and nongovernmental organizations (NGOs) from Paraguay, Uruguay, Argentina and Brazil. The main goal of this initiative was to involve policy makers, NGOs and community-based organizations in the development

of better interventions targeted at drug users and their networks, to address the growing HIV/AIDS epidemic (4).

Prevention initiatives in the Southern Cone and Andean Area. Most South American countries still base their drug policies on a low-tolerance and "drug-free"-oriented approach (4). Until the mid 1990s, strategies that aimed to reduce drug-related harm, such as syringe exchange programs (SEPs), were usually irregular and narrowly-focused, and did not scale up (65). Since the late 1990s, however, successful prevention efforts targeting injection and noninjection drug users have been developed in the region. Syringe exchange programs as well as other outreach initiatives implemented by governments, NGOs and community-based organizations have been targeting IDUs, with Brazil and Argentina taking the lead in South America (3, 66).

Networking has made a fundamental contribution to recent Latin American drug policy reforms and the implementation of harm-reduction strategies. The Latin American Harm-Reduction Network (RELARD), founded in 1998, seeks to consolidate regional cooperation and increase local capacity for harm reduction. Cooperation between RELARD and national and international organizations has supported training, fundraising, information circulation, and harm-reduction efforts (67, 68).

Chile. Chile has developed a rapid assessment and response study and educational activities for different communities, including IDUs. Until now, however, there have been no programs to provide sterile materials to IDUs, and no harm reduction projects have been implemented (4).

Colombia. A rapid assessment and intervention study in downtown Bogotá, Colombia explored patterns of drug use and risk behaviors related to overdose, crime, violence, sexually

transmitted infections and HIV/AIDS among drug users who frequent the "Calle 19" (19th Street) neighborhood. In this study drug users and dealers were interviewed, and health promotion activities and harm reduction strategies were implemented. According to participants, the violence related to drug dealing and to police harassment was perceived as more dangerous than the sexual and health risks of taking drugs. Lack of health insurance limited participant access to health care and drug-dependence treatment. The project identified and worked closely with peer leaders, who conducted peer-education activities and engaged at-risk individuals in treatment and care. The partnership between study staff and community leaders helped create better bridges between at-risk individuals and health interventions, thus contributing to a reduction in HIV/AIDS risk behaviors (62).

Uruguay. In Uruguay the vast majority of drug treatment centers are private and strictly oriented toward abstinence (57). In 2001 the NGO Instituto de Investigación y Desarrollo Social (IDES) organized an intervention program that targeted injection and non-injection drug users and their sexual partners who frequented a high-risk neighborhood. The intervention provided training, information materials and condoms, but did not provide injection paraphernalia, since there is no legal support for this activity in Uruguay. Until now Uruguay has not provided sterile syringes and needles to IDUs, although the IDU population accessed by researches is growing. Interventions so far have been aimed at the general drug-using population (57).

Paraguay. Paraguay does not provide sterile materials to IDUs and no harm-reduction projects have been initiated (45), although some interventions have accessed several IDUs. For example, the NGO PREVER study of this population demonstrated a prevalence of HIV of 15% and frequent high-risk injection practices (4).

Prevention initiatives in Argentina and Brazil.

Argentina. In Argentina there are no comprehensive public policies and public health services for IDUs which might influence the high HIV/AIDS incidence in this population (69). Despite the clear HIV/AIDS epidemic among IDUs, Argentina still lacks large-scale harm-reduction programs at a national, state, and local level (70).

The prevailing drug policy in Argentina is based on abstinence. Starting in the mid-1970s drug possession has been punishable by law. Military dictatorship during the 1970s and 1980s strongly influenced interventions and policies related to the reeducation and rehabilitation of drug users; during this period drug-dependence treatment was the responsibility of psychiatric hospitals and prisons.

Since the mid-1980s, nongovernmental rehabilitation centers have piloted alternative treatment approaches based mainly on therapeutic community models. During the mid-1980s criminal punishments for drug possession were revised, so that if the holder could show that drugs were intended for personal use only, he or she might be required to complete compulsory treatment without incarceration.

However, harm-reduction initiatives have been implemented only in the two largest cities in Argentina, Rosario and Buenos Aires (48), where the distribution of sterile injection equipment began in 1999 (69). The NGO Intercambios in Buenos Aires carried out a rapid assessment and response study and organized several community interventions targeted at injection drug users (71). This study provided support for local initiatives aiming to reduce drug-related harm, and led to the first needle exchange program in Argentina (66).

Brazil. Because of its relevant socio-economic role in South America and the scope of its HIV/AIDS epidemic,

the reformulation of Brazilian HIV/AIDS prevention policies has had a significant impact upon activities in most countries of South America. The first SEP in South America began in Salvador, Bahia, in 1994 (72). According to the Brazilian Ministry of Health, there are over 200 harm-reduction projects in operation in different regions of Brazil (73). These initiatives are supported by a consortium involving the Brazilian Ministry of Health, the World Bank, the United Nations International Drug Control Program (UNDCP) and other international agencies. No other South American country except Argentina has officially endorsed SEPs.

Despite funding restrictions and a lack of managerial expertise in most SEPs, support for harm-reduction initiatives including SEPs is growing in Brazil. Advocacy activities and lobbying have helped to pass several state laws that permit the implementation of SEPs and similar activities, and additional legislative reforms are under negotiation, including a federal bill to regulate SEPs and harm-reduction activities in general. Although federal drug policies still prohibit SEPs, local laws have eased repressive conditions faced by local activists and outreach workers, thereby improving the stability of such initiatives in several Brazilian states (72, 73).

Regional and national networks function as forums for ideas and practical experiences with respect to SEPs and other harm-reduction initiatives. In Brazil there are two national harm-reduction associations—the Brazilian Harm Reduction Association (ABORDA) and the Brazilian Harm Reduction Network (REDUC)—in addition to several local networks. Support from international agencies such as UNAIDS and the World Bank has been necessary to introduce and sustain SEPs in Brazil. The task in the future will be to expand these programs and develop a framework for the integrated evaluation of these initiatives from the onset (72).

CONCLUSIONS

Accelerated globalization has made drug trafficking a worldwide challenge. Traditional habits of psychoactive substance use, such as chewing coca leaves or drinking coca tea—a common part of the social customs and mores of small communities—have been replaced by modern patterns of drug consumption. Frequently, different patterns of drug abuse overlap, creating extensive, intertwined illicit drug markets and a legion of polydrug users. The habit of injecting illicit drugs is on the rise in the South American and Caribbean regions and worldwide.

The growing interconnection between regions and populations has also contributed to the accelerated spread of HIV worldwide, making the AIDS pandemic one of the greatest challenges of our contemporary world. Although prejudices toward drug users and entrenched myths of national immunity to the double challenge of drug use and HIV/AIDS still persist, the present review clearly documents that most countries in the region have been affected by the dissemination of the harmful consequences of drug consumption, including HIV/AIDS.

Global and local drug policies still run counter to scientific evidence in many different contexts. This has substantially delayed and limited the scope of initiatives that could avert or ameliorate the adverse consequences associated with drug use, minimize human suffering, and contain the rising costs associated with the management of HIV/AIDS, viral hepatitis, overdose, and many other problems.

There is no excuse for further delay or hesitation. South America and the Caribbean must scale up their initiatives to curb the spread of HIV/AIDS, take advantage of improved local scientific evidence, subject any project and program to continuous monitoring and scrutiny, and adopt the best international scientific standards.

REFERENCES

1. WHO. IDUF Fact Sheet. Available from: http://www.who.int/substance_abuse/publications/en/IDUFactSheet.pdf. Accessed 8 May 2004.
2. Malta M, Carneiro-da-Cunha C, Kerrigan D, Strathdee SA, Monteiro. Case management of human immunodeficiency virus-infected injection drug users: a case study in Rio de Janeiro, Brazil. *Clin Infect Dis*. 2003;37(Suppl 5):S386–91.
3. Mesquita F, Kral A, Reingold A, Bueno R, Trigueiros D, Araújo PJ. Trends of HIV infection among injection drug users in Brazil in the 1990s: The impact of changes in patterns of drug use. *J Acquir Immune Defic Syndr Hum Retrovirol*. 2001;28(3):298–302.
4. Rodríguez CM, Marques LF, Touzé G. HIV and injection drug use in Latin America. *AIDS*. 2002;16:S34–S41.
5. Mejía Motta, IE. La inyección de drogas en Bogotá: una realidad oculta. Santa Fe de Bogotá: Presidencia de la República de Colombia; 2003.
6. Hacker MA, Friedman SR, Telles PR, Teixeira SL, Bongertz V, Morgado MG, et al. The role of “long-term” and “new injectors” in a declining HIV/AIDS epidemic in Rio de Janeiro, Brazil. *Subst Use Misuse*. 2005;40: 99–123.
7. UNAIDS. UNAIDS fact sheet: Latin America and the Caribbean. Available from: <http://www.unaids.org/EN/Geographical+Area/By+Region/latin+america+and+the+caribbean.asp>. Accessed 10 April 2004.
8. Kovalski SF. Poverty, drug abuse fuel Caribbean AIDS outbreak. *AIDSlink*. 1998;(49): 6–7.
9. Deren S, Kang SY, Rapkin B, Robles RR, Andia JF, Colon HM. The utility of the PRECEDE model in predicting HIV risk behaviors among Puerto Rican injection drug users. *AIDS Behav*. 2003;7(4):405–12.
10. Noel RJ Jr, Chaudhary S, Rodriguez N, Kumar A, Yamamura Y. Phylogenetic relationships between Puerto Rico and continental USA HIV-1 pol sequences: a shared HIV-1 infection. *Cell Mol Biol*. 2003;49(8):1193–8
11. Charles-Nicholas. A The drug situation in the Caribbean. In: Conference program and abstract book. 8th International Conference on the Reduction of Drug Related Harm; 1997 Mar 23–27; Paris: IHRA; 1997. P. 68.
12. Gomez MP, Bain RM, Major C, Gray H, Read SE. Characteristics of HIV-infected pregnant women in the Bahamas. *J Acquir Immune Defic Syndr Hum Retrovirol*. 1996;12(4): 400–5.
13. Low N, Egger M, Gorter A, Sandiford P, Gonzalez A, Pauw J, et al. AIDS in Nicaragua: epidemiological, political, and sociocultural perspectives. *Int J Health Serv*. 1993;23(4):685–702.
14. Díaz RMM, Salgado ZG. Sífilis, hepatitis B y VIH em um cartel de expendio de drogas em Manágua, Nicarágua. In: *Anais do Fórum 2000*, Vol I. Conferencia Latinoamericana y del Caribe-Forum 2000: 2000 Nov 6–10; Rio de Janeiro; 2000. P. 234.
15. Bastos FI, Barcellos C. A geografia social da AIDS no Brasil. *Rev Saude Publica*. 1995;29(1): 52–62.
16. Barcellos C, Bastos FI. Redes sociais e difusão da AIDS no Brasil. *Bol Oficina Sanit Panam*. 1996;121(1):11–24.
17. Szwarcwald CL, Bastos FI, Esteves MAP, Andrade CLT. A disseminação da epidemia de AIDS no Brasil, no período de 1987–1996: Uma análise espacial. *Cad Saude Publica*. 2000;16(Suppl 1):7–19.
18. Bastos FI, Pina MF, Szwarcwald CL. The social geography of HIV/AIDS among injection drug users in Brazil. *Int J Drug Policy*. 2002; 13(2):137–44.
19. Andrade T, Dourado I, Galvão-Castro B. Associations among HTLV-1, HTLV-II and HIV in injecting drug users in Salvador, Brazil. *J Acquir Immune Defic Syndr Hum Retrovirol*. 1998;18(2):186–7.
20. Brazil, Ministry of Health. Dados e Pesquisas em DST/AIDS. Available from: <http://www.aids.gov.br>. Accessed 26 April 2004.
21. Beyrer C, Razak MH, Lisam K, Chen J, Lui W, Yu XF. Overland heroin trafficking routes and HIV-1 spread in south and south-east Asia. *AIDS*. 2000;14(1):75–83.
22. Kalichman, A. AIDS and intravenous drug use (IVDU) in Brazil. In: Monteiro MG, Inciardi JA, eds. *Brasil-United States Binational Research*. São Paulo: CEBRID; 1993. Pp. 49–61.
23. Grangeiro A. O perfil sócio-econômico da AIDS no Brasil. In: Parker R, Bastos C, Galvão J, Pedrosa JS, eds. *A AIDS no Brasil*. Rio de Janeiro: ABIA/UERJ & Relume-Dumará; 1994. Pp. 91–125.
24. Fonseca MGP, Castilho EA. Os casos de aids entre usuários de drogas injetáveis. *Brasil, 1980–1997*. *Bol Epidemiol AIDS*. 1997;X(3): 6–14.
25. Frischer M. Mobility and the diffusion of drug injecting and HIV In: Stimson G, Des Jarlais DC, Ball A, eds. *Drug injecting and HIV infection: global dimensions and local responses*. London: UCL Press; 1998. Pp. 149–67.
26. Bastos FI, Barcellos C, Lowndes CM, Friedman SR. Co-infection with malaria and HIV in injecting drug users in Brazil: a new challenge to public health? *Addiction*. 1999;94(8): 1165–74.
27. Caiiffa WT, Proietti FA, Carneiro-Proietti AB, Mingoti SA, Doneda D, Gandolfi D, et al. Epidemiological Study of Injection Drug Users in Brazil (AJUDE-Brasil Project). The dynamics of the Human Immunodeficiency Virus epidemics in the south of Brazil: Increasing role of injection drug users. *Clin Infect Dis*. 2003; 37(Suppl 5):S376–81.
28. Teixeira SLM, Bastos FI, Telles PR, Hacker MA, Brígido LF, Oliveira CAF, et al. HIV-1 infection among injection and ex-injection drug users from Rio de Janeiro, Brazil: prevalence, estimated incidence and genetic diversity. *J Clin Virol*. 2004;31(3):221–6.
29. Pechansky F, von Diemen L, Kessler F, Hirakata V, Metzger D, Woody GE. Preliminary estimates of Human Immunodeficiency Virus prevalence and incidence among cocaine abusers of Porto Alegre, Brazil. *J Urban Health*. 2003;80(1):115–26.
30. Turchi MD, Diaz RS, Martelli CM, Sabino EC, Da Silva WP, Filho OF, et al. Genetic diversity and HIV-1 incidence estimation among cocaine users in São Paulo, Brazil. *J Acquir Immune Defic Syndr*. 2002;30(5):527–32
31. Szwarcwald CL, Bastos FI. Spatiotemporal model: an application to the AIDS epidemic in São Paulo, Brazil. In: Gierl L, Cliff AD, Valleron AJ, Farrington P, Bull M, eds. *Geomed '97*. Proceedings of the International Workshop on Geomedical Systems. Stuttgart, Leipzig: BG Teubner; 1998. Pp. 43–53.
32. Telles PR, Bastos FI, Guydish J, Inciardi JA, Surratt HL, Pearl M, et al. Risk behaviors and HIV seroprevalence among IDUs in Rio de Janeiro, Brazil. *AIDS* 1997;11(Suppl 1):S35–44.
33. Carvalho HB, Mesquita F, Massad E, Bueno RC, Lopes GT, Ruiz MA, et al. HIV and infections of similar transmission patterns in a drug injectors community of Santos, Brazil. *J Acquir Immune Defic Syndr Hum Retrovirol*. 1996;12(1):84–92.
34. Guimarães ML, Bastos FI, Telles PR, Galvão-Castro B, Diaz RS, Bongertz V, et al. Retrovirus infections in a sample of injecting drug users in Rio de Janeiro City, Brazil: prevalence of HIV-1 subtypes, and co-infection with HTLV-I/II. *J Clin Virol*. 2001;21(2):143–51.
35. Andrade T, Dourado I, Farias A, Galvão-Castro B. Changing patterns of HIV-1 and HTLV-I/II seroprevalence among IDUs from different districts of Salvador, Brazil: Effectiveness of prevention strategies? In: *Abstract Book Vol I: 14th International AIDS Conference; 2002 July 7–12; Barcelona, Spain*. 2002. P. 117
36. Szwarcwald CL, Bastos FI, Gravato N, Lacerda R, Chequer PN, Castilho EA. The relationship of illicit drug consume to HIV-infection among commercial sex workers (CSWs) in the city of Santos, São Paulo, Brazil. *Int J Drug Policy*. 1998;9(6):427–36.
37. Souza CT, Diaz T, Suttmoller F, Bastos FI. The association of socioeconomic status and use of crack/cocaine with unprotected anal sex in a cohort of men who have sex with men in Rio de Janeiro, Brazil. *J Acquir Immune Defic Syndr*. 2002;29(1):95–100.
38. Dunn J, Laranjeira RR. Transitions in the route of cocaine administration-characteristics, direction and associated variables. *Addiction*. 1999;94(6):813–24
39. Ferri CP, Gossop M. Route of cocaine administration: patterns of use and problems among a Brazilian sample. *Addict Behav*. 1999;24: 815–21.
40. Fernandez O. Patterns of cocaine use in São Paulo/Brazil: The nature and extent of consumption. In: Stimson G, ed. *Abstract Book: 15th International Conference on the Reduction of Drug Related Harm; 2004 April 20–24; Melbourne, Australia: IHRA; 2004*. P. 215.

41. Teixeira PR. La interacción VIH/SIDA y drogas en los países del Cono Sur. [Background paper]. At: Meeting of the Project Drug abuse and AIDS in the Southern Cone; Montevideo, Uruguay, 1997.
42. Hamers FF, Batter V, Downs AM, Alix J, Cazein F, Brunet JB. The HIV epidemic associated with injecting drug use in Europe: geographic and time trends. *AIDS*. 1997;11(11):1365-74.
43. Inchaurrega, S. Drogadicción y SIDA. In: Inchaurrega S, ed. *El SIDA en la Cultura: Problemáticas a Fines de Siglo*. Rosario, Argentina: Homo Sapiens; 1997.
44. Bloch CR, Procupet AS, Kaufmann R, Tecilla E. Situación epidemiológica de los usuarios de drogas inyectables enfermos de SIDA en la Argentina. In: *Anais do Forum 2000, Vol I. Conferencia Latinoamericana y del Caribe-Forum 2000*; 2000 Nov 6-10; Rio de Janeiro: 2000. P. 224.
45. SIDALAC. Situação do HIV/AIDS na América Latina e Caribe. Uma revisão baseada no FORO 2003. José Antonio Izazola; Robinson Cabello; Carlos Cáceres; Gabriela Hamilton. Available from: <http://www.sidalac.org.mx/spanish/publicaciones/foro2003/foro2003.pdf> Accessed 12 April 2004.
46. Procupet AS, Bianco MB. HIV/AIDS in Argentina: Situation of the epidemic at the end of 2001. In: *Abstract Book Vol I: 14th International AIDS Conference, 2002 July 7-12, Barcelona, Spain*; 2002. P. 443.
47. Sosa-Estáni S, Rossi D, Weissenbacher M. Epidemiology of Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome in injection drug users in Argentina: High seroprevalence of HIV infection. *Clin Infect Dis*. 2003;37(Suppl 5):S338-42.
48. Siri P, Inchaurrega S. 'First steps': using rapid assessment and response methods to develop research, intervention and advocacy capacity for addressing drug use in Rosario City, Argentina. *Int J Drug Policy*. 2000;11(1-2):125-32.
49. Weissenbacher M, Rossi D, Raducich G, Sosa-Estáni S, Vila M, Vivas E, et al. High seroprevalence of bloodborne viruses among street-recruited drug users from Buenos Aires, Argentina. *Clin Infect Dis*. 2003;37(Suppl 5):S348-52.
50. Diz AMM, Kornblit AL. Consumo de drogas por vía endovenosa y riesgo de infección por el VIH desde la perspectiva de los actores. In: *Anais do Fórum 2000, Vol II. Conferencia Latinoamericana y del Caribe-Forum 2000*; 2000 Nov 6-10; Rio de Janeiro: 2000. P. 934.
51. Quirelas SC, Gislhonzoni A, Calabrese A. Relevamiento epidemiológico sobre usuarios de drogas en la Argentina. In: *Anais do Forum 2000, Vol I. Conferencia Latinoamericana y del Caribe-Forum 2000*; 2000 Nov 6-10; Rio de Janeiro: 2000. P. 236.
52. Pando MLA, Biglione MM, Toscano MF, Rey JA, Russel KL, Negrete M, et al. Human Immunodeficiency Virus type 1 and other viral co-infections among young heterosexual men and women in Argentina. *Am J Trop Med Hyg*. 2004;71(2):153-9.
53. Jiménez AHG. Tuberculosis y sida en el Paraguay. *Bol Sanit Panam*. 1995;118:249-53.
54. Míguez HA, Pecci MC, Carrizosa A. Epidemiología de abuso del alcohol y las drogas en Paraguay. *Acta Psiquiatr Am Latina*. 1992;38:19-29.
55. Lapetina A. Street children and solvent misuse. Opportunities and challenges for the establishment of a harm reduction network in Montevideo, Uruguay. "Barrilete" Project: A case study. In: *Abstract Book: 11th International Conference on the Reduction of Drug Related Harm*; 2000 April 9-13; States of Jersey, UK: IHRA; 2000. P. 102.
56. Berriolo R, Osimani ML, Serra M, Weissenbacher MC. El SIDA y su asociación con el uso de drogas en Uruguay. *Rev Med Urug*. 1997;13:45-53.
57. Osimani, ML. The challenge of implementation of preventive programs in a developing country: Experiences, situations, and perspectives in Uruguay. *Clin Infect Dis*. 2003;37(suppl 5):S422-S426.
58. Peyraube R, Garateguy S, Dell'Acqua C. Harm-reduction related to illegal drug use during pregnancy. In: *Stimson G, ed. Abstract Book: 15th International Conference on the Reduction of Drug Related Harm*; 2004 April 20-24; Melbourne, Australia: IHRA; 2004. P. 210.
59. Negrete, P. La región andina de América del Sur: el hábito local de mascar coca en las zonas rurales y fumar pasta de coca en las ciudades. In: *Edwards G, Arif A, eds. Los Problemas de la Droga en el Contexto Sociocultural*. Geneva: WHO; 1981. Pp. 65-73.
60. Pérez-Gómez A. Drug injecting in Bogotá, Colombia. WHO Drug Injecting Project Planning Meeting Phase II. Geneva: PSA/WHO; 1996.
61. Míguez MJ, Page B, Baum MK. Illegal drug use and HIV-1 infection in Colombia. *Lancet*. 1997;350:1635.
62. Ross T. Using and dealing on *Calle 19*: a high risk street community in central Bogotá. *Int J Drug Policy*. 2002;13:45-56.
63. McCarthy MC, Wignall FS, Sanchez J, Gottuzzo E, Alarcon J, Phillips I, et al. The epidemiology of HIV-1 infection in Peru, 1986-1990. *AIDS*. 1996;10:1141-5.
64. Castro E, Echeverría G, Deibis L, Gonzalez de Salmen B, Dos Santos Moreira A, Guimarães ML, et al. Molecular epidemiology of HIV-1 in Venezuela: high prevalence of HIV-1 subtype B and identification of a B/F recombinant infection. *J Acquir Immune Defic Syndr*. 2003;32(3):338-44.
65. Weissenbacher M, Astarloa L, Touzé G, et al. Regional project for HIV prevention among IDU in the southern cone of Latin America. In: *Abstract Book: 11th International Conference on the Reduction of Drug Related Harm, 2000 April 9-13; States of Jersey, UK: IHRA*; P. 164.
66. Touzé G, Rossi D, Cymerman P, et al. Prevención del VIH/SIDA en usuarios de drogas. Resultados de un proyecto de investigación e intervención. Buenos Aires: Intercambios; 1999.
67. Rede latino-americana de redução de danos (RELARD). Available from: <http://www.relard.net/>. Accessed 8 May 2004.
68. Touzé G. HIV prevention in drug using populations in Latin America. 2000 Global Research Network Meeting on HIV Prevention in Drug Using Populations. Third Annual Meeting Report, National Institute on Drug Abuse, Washington, D.C.: NIDA; 2001. Pp. 109-12.
69. Inchaurrega S. Drug use, harm reduction, and health policies in Argentina: obstacles and new perspectives. *Clin Infect Dis*. 2003;37(Suppl 5):S366-71.
70. Lavarello D, Lottero M, Chavero M, Toledo A, Espinola M, Gerlero S, et al. Harm reduction actions as a health care construction process at a public health center in Rosario, Argentina. *Clin Infect Dis*. 2003;37(Suppl 5):S353-7.
71. Rossi D, Goltzman P, Cymerman P, Touze G, Weissenbacher M. Human immunodeficiency virus/acquired immunodeficiency syndrome prevention in injection drug users and their partners and children: lessons learned in Latin America—the Argentinean case. *Clin Infect Dis*. 2003;37(Suppl 5):S362-5.
72. Bastos FI, Strathdee SA. Evaluating effectiveness of syringe exchange programmes: current issues and future prospects. *Soc Sci Med*. 2000;51(12):1771-82.
73. Brazil. Brazilian Ministry of Health. Brazilian National Response to HIV/AIDS. In: *Stimson G, ed. Abstract Book: 15th International Conference on the Reduction of Drug Related Harm*; 2004 April 20-24; Melbourne, Australia: IHRA; 2004.

Manuscript received on 27 September 2004. Revised version accepted for publication on 26 May 2005.

RESUMEN**El virus de la inmunodeficiencia humana, el sida y el consumo de drogas en América del Sur y el Caribe: pruebas epidemiológicas e iniciativas para frenar la epidemia**

Objetivo. En el trabajo se revisan los datos acerca del consumo de drogas en relación con la propagación del virus de la inmunodeficiencia humana y el sida en América del Sur y el Caribe.

Métodos. La información se obtuvo mediante una revisión exhaustiva de las principales bases de datos bibliográficas, así como de sitios en la web pertenecientes a instituciones internacionales y redes regionales cuya labor comprende medidas contra el uso indebido de sustancias o el virus de la inmunodeficiencia humana y el sida, más los resúmenes de conferencias y reuniones.

Resultados. Aunque sigue habiendo aspectos que se desconocen, hay cada vez más datos que apuntan al importante papel que desempeña el uso de cocaína inyectada en las epidemias que aquejan al Brasil y al Cono Sur. Las áreas caribeña y andina hasta ahora se han visto poco afectadas por la diseminación del consumo de drogas inyectadas y sus consecuencias, pero en países del Cono Sur la situación ha venido cambiando, observándose ahora una mayor prevalencia de prácticas peligrosas relacionadas con la inyección. La mayor disponibilidad actual de la heroína en el Área Andina y el abuso del *crack* (basuco) y su impacto en la transmisión del virus de la inmunodeficiencia humana por la vía sexual en muchas ciudades se suman a los otros retos planteados. Estrategias orientadas a reducir el peligro se han establecido en la mayor parte del territorio brasileño y están cobrando impulso en la Argentina, pero en otros países de la Región sigue habiendo obstáculos en forma de leyes restrictivas y la falta de un apoyo más amplio.

Conclusión. Es menester fomentar una mayor participación de los países latinoamericanos y caribeños en los protocolos de investigación y en los debates en torno a experiencias fructíferas y fallidas, todo con el fin de reducir a un mínimo las actuales barreras que impiden adoptar medidas eficaces para frenar la epidemia de infección por el virus de la inmunodeficiencia humana y el sida en esta región.

Palabras clave

América del Sur, Caribe, psicotrópicos, cocaína, virus de la inmunodeficiencia humana, síndrome de inmunodeficiencia adquirida.

De no querer ser a creer que se es ya, va la distancia de lo trágico a lo cómico.

José Ortega y Gasset,
ensayista y filósofo español (1883–1955)