

Substance Use and Its Toll on Society

BY JENNIFER HILLEBRAND AND MARISTELA G. MONTEIRO

This article provides a broad overview of the extent of substance use across the world, its related impact on society, and activities currently being undertaken by the World Health Organization (WHO) to combat this problem. While substance use per se refers to a wide range of psychoactive drugs, this article concentrates on those products known to cause the greatest harm to society, namely tobacco, alcohol, and illicit stimulants, specifically amphetamines, opiates, and cocaine.

Worldwide Substance Use

Tobacco

Today, about one in three adults, or 1.1 billion people, smoke. By 2025, the number is expected to rise to more than 1.6 billion. In the past, tobacco was often chewed, snorted (snuff), or smoked using a pipe, and although these practices persist, they are declining and manufactured and hand-rolled cigarettes now account for 85 percent of all tobacco consumption. Global trends in cigarette consumption show that it is decreasing overall in high-income countries,¹ with the exception of prevalence rates for adult females, which are on the rise in these countries in North America and the high-income countries of Western Europe, such as in Norway where approximately one-third of the adult female population smokes.² In contrast, cigarette consumption in low- and middle-income countries climbed steadily between 1970 and 1990, although the upward trend may have slowed a little since the early 1990s.³ Individual country data on their numbers of adult male smokers reveal that prevalence is highest in parts of Eastern Europe and Asia; for example 63 percent of adult males in both the Russian Federation and China smoke.⁴

Alcohol Consumption Rates

In terms of adult per capita alcohol consumption, global trends reveal that regions experiencing the greatest levels of economic development have the highest alcohol consumption levels, with approximately five to 10 liters of pure alcohol ingested per adult per year. Additionally, a rising trend is apparent in the Western Pacific region, while in Europe—which includes the new independent states—adult per capita alcohol consump-

tion is falling. However, this declining pace is overstated due to the large quantities of unrecorded alcohol production and consumption that have occurred since the breakup of the former Soviet Union. For example, adult per capita alcohol consumption in 1993 in Ukraine rises from a little more than four liters of pure alcohol ingested per adult per year to 13 liters if unrecorded consumption is adjusted for. Additionally, excessive alcohol consumption is seriously affecting the Russian Federation, where mortality from alcohol-related diseases in general rose sharply in the early 1990s. The main factor for this was an increase in death through alcohol poisoning.⁵ It is estimated that approximately 35,000 Russians die this way every year. There is also considerable evidence to say that during the 1990s, alcohol was a major factor in the decline of Russian life expectancy.⁶

Illicit Drugs

In recent years, illicit drug use has also increased throughout the world. Based upon unofficial estimates of the United Nations Drug Control Programme (UNDCP), the annual global rate of illicit drug consumption is likely to be in the range of three to four percent of the world's total population.⁷ In 1999, the UNDCP observed a rising trend for illicit drug consumption, especially in developing countries and countries in transition, such as in the Russian Federation, where the number of people using illicit drugs by the end of 1999 was approximately 350,000 compared with 131,000 in 1995. This the trend in Russia is continuing upward.⁸

The most commonly used illicit drugs are opiates, amphetamine-type stimulants, and cocaine. Prevalence rates for opiate consumption vary between one-tenth to two percent for the total global population, with the highest annual prevalence rates—defined as exceeding one percent of the population above the age of 15—reported in Asian countries, such as the Islamic Republic of Iran.⁹ Amphetamine-type stimulants (ATS) include methamphetamines and Ecstasy. In 1999, UNDCP

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reported that methamphetamines were the most commonly used ATS in East Asia, while amphetamines were dominant in Europe. According to a 1996 UNDCP review, there are about 20 countries, such as Japan and Korea, in which the use of an ATS was more widespread than that of heroin and cocaine combined. Use of cocaine is still concentrated in the Americas—with the largest market being the United States—although in recent years a large increase in cocaine consumption has been reported by the UNDCP in Western Europe, Australia, Nigeria, and South Africa. The 1999 “US National Household Survey on Drug Abuse” reveals that the annual number of new users of any form of cocaine rose between 1994 and 1998 from 514,000 to 934,000 persons.¹⁰ In Eastern Europe, the Middle East, Asia, and Africa—except as stated above—cocaine use is limited.

Disease Burden of Substance Use

Tobacco, alcohol, and illicit drug use pose a significant threat to the health, social, and economic fabric of families, communities, and nations. In an initial estimate of factors responsible for the global burden of disease, tobacco contributed to 6 percent of all deaths world wide, followed by alcohol at 1.5 percent and illicit drug use at 0.2 percent. Looking at the percentage of total years of life due to these substances, it has been estimated that tobacco accounts for 2.1 percent of the total years of life lost, alcohol for 6 percent, and illicit drugs for 0.3. Furthermore, morbidity from alcohol and tobacco, measured in years of life lost to disability, have a greater impact on health than poor sanitation or hypertension.¹¹

Specific Components of Morbidity Related to Tobacco Use

The health impacts of tobacco consumption are among the most often described in biomedical literature, and it is well known that tobacco use causes fatal and disabling diseases such as cancer, ischemic heart disease, other circulatory diseases, and respiratory diseases such as emphysema.

Foremost among the cancers caused by tobacco is that of the lung. Ninety percent of all lung cancer cases have been linked to cigarette smoking¹² and more than one-third of tobacco related deaths are due to lung cancer.¹³ The estimated smoking-attributable mortality based on the *Cancer Prevention Study II* for the four most common smoking-related diseases—lung cancer, chronic obstructive pulmonary disease, coronary heart disease, and cerebrovascular disease—is 19 percent.¹⁴

Specific Components of Morbidity Related to Alcohol Use

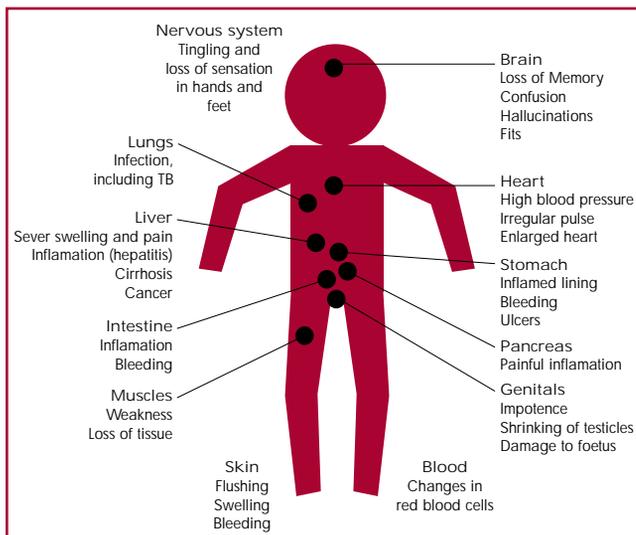
Not only is alcohol use related to a wide range of physical and mental harms, but most health professionals agree that practically no organ in the body is immune from its effects.¹⁵ Conditions, by definition, caused by alcohol use include alcoholic psychosis, liver cirrhosis, pancreatitis, alcohol dependence, alcoholic cardiomyopathy, and fetal alcohol syndrome. Alcohol is also related to accidents, injuries, violence—domestic violence in particular—assaults, homicide, suicide, and risky behaviors such as unsafe sexual practices. Social consequences of heavy alcohol consumption include productivity and work functioning losses, strains on family life and income—particularly in developing countries—gender conflicts, and problems with authorities, such as members of the police force.

WHO’s recently published *Global Status Report on Alcohol* compiles information on the impact of alcohol on mortality due to alcohol dependence or liver disease and cirrhosis in 173 WHO Member States. The death rate from alcohol dependence is highest in Lithuania with 10 deaths per 100,000 people, followed by Hungary with 7.6 and Latvia with 7.2 deaths per 100,000. Moldova has the highest rate of liver disease and cirrhosis at 62.2 deaths per 100,000, with Hungary in second place at 46.6. Not surprisingly, both countries also have high adult per capita consumption levels of alcohol. In 1993, the number of liters of pure alcohol ingested per adult per year in Moldova was 12.67; in Hungary in 1995 it was 11.47.¹⁶

Specific Components of Morbidity Related to Illicit Drugs

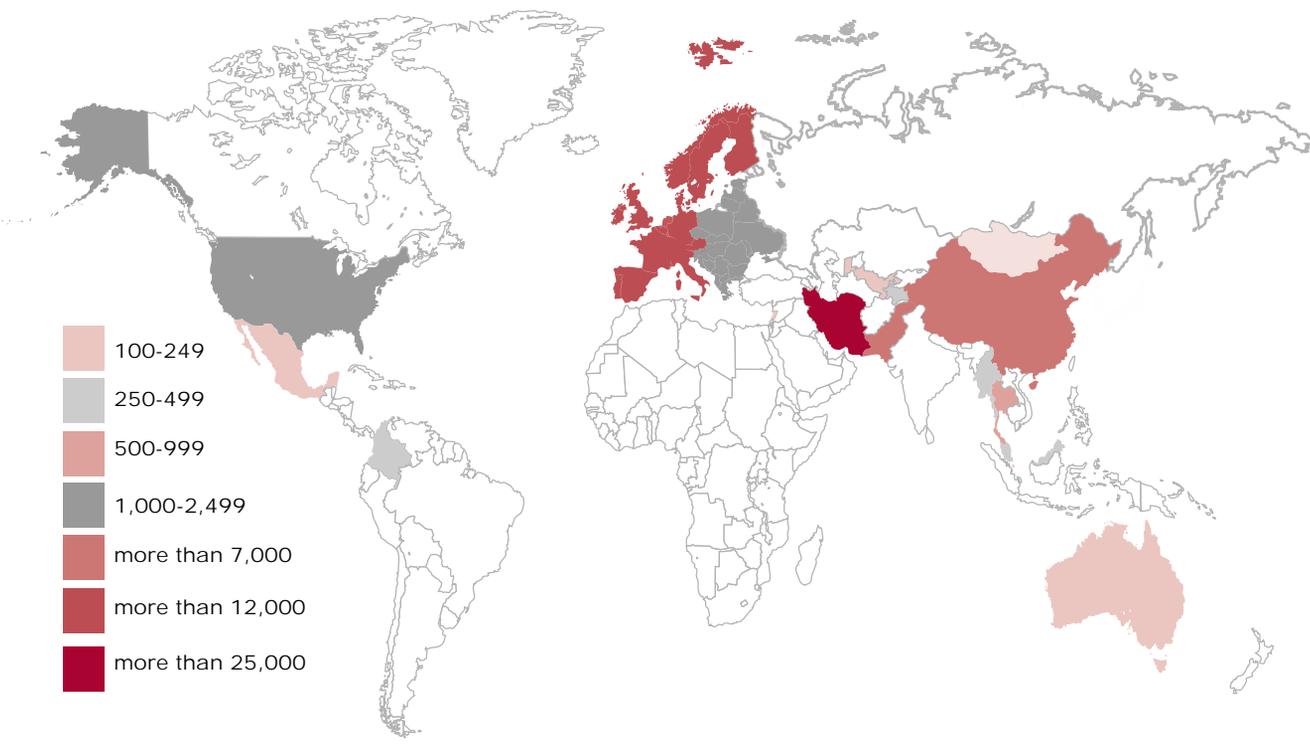
Illicit drug consumption, especially injection drug use, is known to contribute to the transmission of HIV and hepatitis B and C.

Adapted from “AUDIT The Alcohol Use Disorders Identification Test: Guidelines for Use in Primary Care,” WHO, www.who.int/substance_abuse/top/c_assessment.htm



The medical reasons alone are substantial enough for encouraging citizens to take responsibility for their drinking, as shown by this illustration.

Worldwide Heroin and Morphine Seizures



Source: Adapted from the United Nations Office for Drug Control and Crime Prevention, *DETA (Replies to Annual Reports Questionnaire)*. From *World Drug Report 2000*. www.odccp.org/80/world_drug_report.html.

This map shows the weight in kilograms of seizures of heroin and morphine for 1998, with only the highest ranking countries represented. Note that Western and Eastern Europe are represented as a region; totals for individual countries may vary.

In several countries, such as Bahrain, Italy, and Spain, over half of all HIV/AIDS cases are attributed to injection drug use.¹⁷ In 1996, 110 countries reported injection drug use. It is estimated that there may be as many as 5 million persons throughout the world who inject illicit drugs.¹⁸

The spread of injection drug use to an increasing number of developing countries, where previously the behavior was often unknown, is of great concern. In the Russian Federation, for example, where approximately half of all HIV cases were reported in the first nine months of 1999, drug injection is considered the primary risk factor for the region. In Moscow alone, 2,700 new cases of HIV were reported in 1999. Considerable concern also exists about current infection rates in China, where drug injection is the major risk factor for new infections and the practice itself appears to be becoming increasingly popular.¹⁹⁻²¹

The adverse consequences of amphetamine and cocaine use include numerous damaging effects, both acute and chronic, such as violent behavior, anxiety, confusion, insomnia, and psychotic features. Irritability, restlessness, and paranoia are also seen among cocaine dependents.

In animal studies examining the effects of long-term

exposure to methamphetamines, damage to as much as 50 percent of the dopamine-producing cells in the brain is reported even at relatively low levels.²² In humans, it has been shown that methamphetamine can cause a variety of cardiovascular problems and inflammation of the heart lining among chronic users. Medical complications associated with cocaine use include cardiovascular and respiratory problems, as well as neurological effects such as strokes, seizures, and gastrointestinal complications.

Financial Burdens of Substance Use

The health consequences of alcohol and illicit drug consumption will tend to affect first, and most acutely, the family of the drug user and the user's workplace. Both alcohol and illicit drug consumption have been shown to be associated with family dysfunction, impaired productivity, violence, and criminal behavior.^{23,24} Once alcohol and drug consumption damage health and affect families and the workplace, the economic costs rise.

The medical costs attributable to tobacco use have been estimated to be \$53.4 billion in the United States alone, which is .84 percent of its Gross Domestic Product.²⁵ Another study estimates that the total economic cost to the US society from



alcohol and drug use is \$246 billion, with harmful alcohol use and dependence accounting for \$148 billion and harmful drug use and dependence set at \$98 billion.²⁶ In Canada, alcohol accounts for approximately \$18.4 billion in total costs, tobacco \$9.56 billion, and illicit drugs \$1.4 billion.²⁷

According to estimates in the United States, the majority of costs from alcohol are the result of loss of productivity and other impacts on society, such as motor vehicle crashes. For drugs, impacts consist mainly of costs due to crime, incarceration, the development of crime as a career, and impaired productivity. Healthcare expenditures account for approximately 12 percent of all economic costs for alcohol and 10 percent for drugs.²⁸

The overall economic costs of substance use could be easily diminished if all those in need of psychoactive substance use disorder treatment received it. A recent estimate by the US Office of Applied Studies at the Substance Abuse and Mental Health Services Administration estimated that only 37 percent of the over 5.3 million people in need of treatment receive it.²⁹ Providing effective treatment to all who are in need could save the United States more than \$150 billion over the next 15 years at a price tag of just \$21 billion.³⁰

WHO Activities Designed to Combat Substance Use

Although the protection and promotion of public health have traditionally been viewed as matters of national concern, the rapid and widespread influence of globalization calls for action on an international level. Because WHO is uniquely fitted to disseminate global health messages and to provide guidance to combat substance use problems in individual countries, several activities within WHO have defined this task as their priority area of work.

WHO's Tobacco Efforts

The Tobacco Free Initiative (TFI) was created by WHO to focus international attention, resources, and action on the global tobacco pandemic. In May 1999, the World Health Assembly—WHO's governing body, comprising 191 Member States—adopted by consensus a resolution that paved the way for starting multilateral negotiations on the WHO Framework Convention on Tobacco Control. This convention will improve transnational tobacco control and cooperation through several avenues, including:

- awareness raising at the national and international level making it clear that tobacco is an important contributor to inequity in health for all;

- coordinated actions such as protecting children and adolescents from exposure to and use of tobacco products; and
- specific obligations that could address issues such as pricing, smuggling, and product regulations.

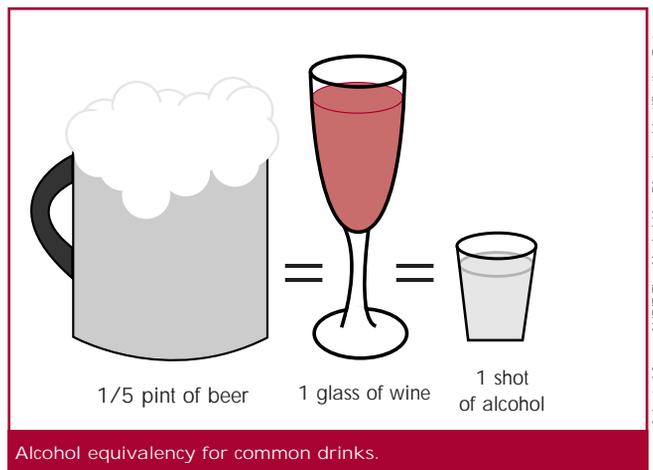
In addition, TFI helps to strengthen the capacity of governments and international agencies to implement national approaches to tobacco control, as well as develops and disseminates evidence for tobacco control through various programs such as Advocacy for Policy Change, Youth and Tobacco, and Surveillance of Tobacco Use.

WHO's Alcohol Efforts

Many countries, particularly in the developing world, lack strong alcohol policies. In response to this, WHO created a Task Force on Alcohol Policy consisting of representatives of different departments within WHO. The Task Force is working to coordinate existing WHO activities in the areas of epidemiology, prevention, and treatment of alcohol problems and to develop a global alcohol policy. A global alcohol conference will be organized in 2001 in Valencia, Spain.

WHO's Illicit Drug Efforts

WHO also concentrates its activities on prevention and management of substance dependence. Within the Mental Health Determinants and Populations Program, information on evidence-based primary prevention of substance dependence disorder is collected and disseminated. Member States are assisted in building capacities for cost-effective, culturally-preventive activities, especially among vulnerable populations, such as street children and sex workers. A global initiative on primary



prevention is also underway in Southern Africa and Eastern Europe in collaboration with the United Nations International Drug Control Programme (UNDCP). Rapid assessment methods were developed to better understand substance use and sexual behavior and are being tested in various developing countries.

The Management of Substance Dependence Program follows an integrated approach—scientifically based on both biological and psychosocial research—with the aim of promoting a broader basis for treatment and of addressing those effects of substance use that have a large impact on public health. The program focuses on the collection and compilation of information on the epidemiology of alcohol and drug use world-wide, on the biological basis of addiction, and on addressing problems related to substance use from a policy and social science perspective.

In addition to the normative function of WHO to provide evidence-based guidance to Member States—such as the development of guidelines for the management of substance dependence and related problems at individual, community, and national levels—the Management of Substance Dependence Program also targets specific health-related problems such as HIV among injection drug users. A large multinational project on injection drug use and HIV/AIDS is underway with the participation of 16 countries—Argentina, Belarus, Brazil, China, Colombia, India, Iran, Kenya, Malaysia, Nigeria, Pakistan, the Russian Federation, Ukraine, the United Kingdom, the United States, and Vietnam—comparing the patterns and practices related to drug use, transitions to injection practices, prevalence of HIV and hepatitis B and C, and the development of appropriate services in all sites. A wealth of information will be collected that will, it is hoped, inform best practices for developing countries to respond to HIV and other infection-related drug use.

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Additional Reading

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Jennifer Hillebrand, MA, MSc is technical officer and Maristela G. Monteiro, MD, PhD, is coordinator of Management of Substance Dependence in the Department of Mental Health and Substance Dependence at the World Health Organization in Geneva, Switzerland.