

Preventing and controlling **drug** **abuse**



Edited by
M. Gossop & M. Grant



World Health Organization
Geneva

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Edited by

M. Gossop

*Head of Research
Drug Dependence Unit
Maudsley Hospital
London, England*

&

M. Grant

*Senior Scientist
Division of Mental Health
World Health Organization
Geneva, Switzerland*



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I. Gossop, M. II. Grant, M.

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The World Health Organization is a specialized agency of the United Nations with primary responsibility for international health matters and public health. Through this organization, which was created in 1948, the health professions of some 165 countries exchange their knowledge and experience with the aim of making possible the attainment by all citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life.

By means of direct technical cooperation with its Member States, and by stimulating such cooperation among them, WHO promotes the development of comprehensive health services, the prevention and control of diseases, the improvement of environmental conditions, the development of health manpower, the coordination and development of biomedical and health services research, and the planning and implementation of health programmes.

These broad fields of endeavour encompass a wide variety of activities, such as developing systems of primary health care that reach the whole population of Member countries; promoting the health of mothers and children; combating malnutrition; controlling malaria and other communicable diseases including tuberculosis and leprosy; having achieved the eradication of smallpox, promoting mass immunization against a number of other preventable diseases; improving mental health; providing safe water supplies; and training health personnel of all categories.

Progress towards better health throughout the world also demands international cooperation in such matters as establishing international standards for biological substances, pesticides and pharmaceuticals; formulating environmental health criteria; recommending international non-proprietary names for drugs; administering the International Health Regulations; revising the International Classification of Diseases, Injuries, and Causes of Death; and collecting and disseminating health statistical information.

Further information on many aspects of WHO's work is presented in the Organization's publications.

Preface

This book represents the consolidation of a number of activities undertaken by WHO in recent years to review the available evidence on the prevention of drug abuse and to draw out the most promising strategies for reducing demand. As such, it provides an overview of current practice around the world and identifies growth points for the future. In the face of increasing rates of drug abuse in many countries, including those previously free from such problems, the need to take effective preventive action becomes ever more urgent. While governments will no doubt intensify their efforts to control the illicit supply of drugs, there is a growing recognition that a long-term solution needs to be sought in the area of demand reduction. This book is intended to assist in that process.

The events leading to the publication of this book began in February 1981, when an initial advisory group meeting was held at the Institute of Psychiatry in London, England. Under the general guidance of Dr Awni Arif and Dr Griffith Edwards, material was gathered from a variety of countries and carefully reviewed through a series of consultations. Dr Juan Carlos Negrete was then asked to prepare a draft report on the prevention of drug-related problems, bringing together the results of this consultative process. His report was examined by a small group of experts who met in June 1985, following which it was substantially revised. This line of work was supported in part by the United Nations Fund for Drug Abuse Control, whose assistance is gratefully acknowledged.

At about the same time, WHO was collaborating with the Government of the United Kingdom in the organization of a Conference of Ministers of Health on Narcotic and Psychotropic Drug Misuse, which was held in London in March 1986. A series of background papers was prepared for this conference and a summary report was presented to the WHO Executive Board in January 1987.

Since the results of the earlier consultations and the discussions at the Ministerial Conference complemented each other, it was decided that it would be worth bringing these two initiatives together in the form of a consolidated publication. A preliminary version of a combined text was prepared by Dr Robert Fisher.

As will be clear from this account of the process leading to the production of this book, much of the work took place before the full significance of acquired immunodeficiency syndrome (AIDS) had been recognized or the link between use of injected drugs and the transmission of the human immunodeficiency virus had been demonstrated. Rather than revising the whole text in a *post hoc* way in order to introduce references to AIDS, the editors have preferred not to include any specific discussion of the AIDS/drug abuse question in this publication.

There are two reasons for this decision. First, the question has already been addressed in a number of other WHO reports and documents. Second, it is a question of such importance that it merits more serious attention than could be devoted to it simply through revision of existing material. The Organization is already involved in activities that will enable it to produce a more comprehensive and authoritative report on this topic in the near future. In the meantime, its omission from this work does not reflect any underestimation of the importance of the problem, but rather a commitment to addressing it with the seriousness that it demands.

Special thanks are due, not only to those already mentioned, but also to the many scientists and scholars around the world who contributed to the consultations on prevention and to the preparations for the Ministerial Conference. The work of the two editors was made all the more rewarding by the richness and variety of the material with which they were able to work.

Summary

The abuse of drugs and alcohol is an international problem which affects almost every country in the world, both developed and developing. The many health problems and even deaths associated with such abuse are the result of a complex interaction between the drug (and its pharmaceutical and toxicological properties), the individual (and his or her personality and health status), and the setting in which the drug is taken. The total costs to society for each category of drug abuse are difficult to determine exactly because of the paucity of adequate data, but there is no doubt that every country in the world incurs substantial costs as a result of the direct and indirect damage caused by drugs and alcohol. Epidemiological data point to an increase in drug abuse in many developing countries, particularly among young people. In the developed countries patterns of abuse are also changing. It has been suggested that abuse of opiates is levelling off among the young in several countries, though there have been worrying increases in the abuse of other illicit drugs, such as cocaine, and legal drugs, such as alcohol. Drug problems among the elderly are also a cause for concern in many developed countries.

Several models of prevention of drug abuse exist, all of which require rigorous thought in order to define the targets for prevention, the goals and the particular measures by which these goals are to be achieved. A "psychosocial" model has been adopted in this publication. Prevention may be seen as acting at the primary (reducing incidence), secondary (reducing prevalence), or tertiary (treatment and rehabilitation) levels, though in practice there is considerable overlap between these categories. All three levels of prevention are relevant to drug- and alcohol-related problems, the choice of intervention(s) being dictated by the substance, the abuser (or potential abuser) and the sociocultural setting.

One of the most widely used approaches to the prevention of some forms of drug abuse has been that of attempting to control

drug production and supply, and thus availability. The decision as to whether prohibition or partial restriction is to be preferred will depend both on the drugs concerned and on sociocultural considerations. Because any attempt to control availability, particularly of "illegal" drugs, is such a highly complex matter, all efforts must be both individualized for each drug and highly coordinated, and sociocultural considerations must play a part in all decisions. Preventing prescription drugs from being illegally diverted is particularly important.

Demand-reduction strategies are being given new emphasis by governments. Such approaches are complementary to and indeed often overlap with activities designed to control the production, supply and availability of potentially abusable drugs. In addition, demand-reduction strategies more closely define vulnerable and "at-risk" populations, so that intervention efforts can be more specifically (and thus successfully) targeted. Control of price through taxation; better use of the media; involvement of the family and peer groups; and the development of promising educational strategies, are all major intervention techniques that are currently in use or being developed.

Treatment programmes are an important part of prevention efforts and both prevention and treatment responses must be fully exploited in the development of drug abuse programmes. Systematic screening and risk-factor programmes are particularly important for early intervention. In the development of treatment programmes, both community-based primary-level care and the mobilization of existing resources should be emphasized. Furthermore, the complexity of drug abuse often requires individualized programmes to deal with the specific health and social problems created by the abuser.

An important first step in the prevention of drug abuse is to estimate the extent of the problem. For this purpose, in addition to adequate monitoring of interventions, a valid, reliable, and easily accessible information system is vital. Both direct and indirect methods of determining the nature and the extent of drug abuse are available; the latter usually involve the monitoring of indicators of associated antisocial behaviours or adverse health consequences of drug abuse.

Drug abuse must be considered a total community problem and thus the responsibility of everyone. There are, however, certain groups who are in a unique position to intervene, such as strategically placed government leaders and health workers. The latter, to be most effective, should have attitudes, information and skills that will facilitate early detection and treatment. Other

groups well placed for successful intervention include community workers, educators and law enforcement personnel.

Prevention must be the core of any successful drug abuse programme. The development of a prevention policy, goals, and strategies to achieve those goals must be an early stage of all substance abuse programmes. In the planning stages, all prevention efforts must be based on a realistic appraisal of the community's needs and a clear understanding of the problems caused by the different substances in question. Most importantly, the policies underlying drug abuse prevention and the approaches that are used must be compatible with the health, sociocultural, economic and political realities of the communities in which they are to be implemented. Finally, continued monitoring of the nature and extent of a community's drug abuse problem(s) and evaluation of programme effectiveness are not optional extras but essential in ensuring that the best use is made of resources.

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The problem of drug abuse

Introduction

Current evidence from around the world reveals a continuing upward trend in the misuse of psychoactive drugs. However, the data available, because of the nature of the problem and current data-gathering practices, are often of poor quality so that the true dimensions of the problem are underestimated.

Any country may find itself faced with serious problems of many kinds related to the abuse of psychoactive drugs. The focus of this publication is primarily on health problems and on the action that can be taken specifically by ministries of health to counter this threat. In considering what action can be taken, it is worth remembering that WHO defines health as a state of complete physical, mental and social well-being. A health focus is therefore a broad one.

The problem of drug abuse involves not only illicit but also licit and prescribed substances. In many countries the use of tobacco products and the abuse of alcohol are associated with serious health and social problems. However, the major focus of this book will be on the abuse of psychoactive substances other than alcohol and tobacco. Furthermore, as noted by the Conference of Ministers of Health on Narcotic and Psychoactive Drug Misuse, held in London on 18–20 March 1986, the potential for an explosive growth of drug abuse exists in any community; indigenous patterns of drug use can be quickly overwhelmed by the epidemic spread of drug abuse by injection, the sudden availability of synthetic drugs, or the emergence of multiple drug abuse patterns.

The drugs involved

General concepts

The prevention of drug problems is complicated by the fact that: (1) drugs vary in effect and toxicity; (2) drug habits can create

many different types of problems; and (3) drugs are taken in different ways by people from different societies. Drug abuse is thus a multidimensional problem, and it is not possible to design any single prevention strategy that is applicable to all cases. For this reason, it is important that separate approaches and strategies are developed that take into account the particular sociocultural status of each habit. It is also necessary to take account of the specific properties of each drug being abused.

Despite the multitude of individual drugs used around the world, the problem can be simplified if it is realized that there are relatively few drug types or families, and that all the drugs within any one type have a considerable family resemblance to one another. Thus, for the purposes of this publication, it will be sufficient if the reader is familiar with the general characteristics of the major drug groups and knows in which group to place any individual drug.

Types of drugs

Opiates (or opioids)

The prototype drug for this group is morphine, the major active ingredient in opium (the origin of the name opiate for this family of drugs). Opium is the resinous exudate of the white poppy. Opium contains, as well as morphine, other psychoactive substances which can be extracted in pure form, including codeine, a widely used drug for pain and cough.

Morphine can be converted by a relatively simple chemical process into heroin (diacetyl morphine or diamorphine). In addition, there are many entirely synthetic opiates, such as methadone (a drug used widely in the treatment of heroin dependence), pethidine (meperidine) and dipipanone. All these substances share a capacity to relieve pain, to produce a pleasant, detached, dreamy euphoria, and to induce physical dependence, leading to withdrawal symptoms when the drug is stopped. Withdrawal from opiates can be very distressing, but will not be fatal unless the patient is otherwise severely ill or debilitated. The general concepts of physical dependence and withdrawal are discussed in Chapter 2.

Depressants

This drug group includes alcohol, the barbiturates, and an enormous variety of synthetic sedatives and sleeping tablets

(hypnotics). These substances have in common the ability to cause a degree of drowsiness and sedation or pleasant relaxation, but may also produce "disinhibition" and loss of learned behavioural control as a result of their depressant effect on higher centres of the brain. They all have the potential to induce changes in the nervous system that lead to withdrawal syndromes, the possible seriousness of which should be emphasized. Withdrawal from severe physical dependence on alcohol or barbiturates can be life-threatening.

"Minor tranquillizers" of the benzodiazepine type, such as diazepam or chlorthalidoxepoxide, which have achieved something of a vogue in recent years, are probably best placed in the general depressant group, although they also have some distinctive features. The benzodiazepines have been shown to be safer drugs in clinical practice than the barbiturates. It is clear, however, that they can produce physical and psychological dependence if used regularly, and abuse of these drugs has increased rapidly since their introduction. Where physical dependence occurs, there are a number of distressing and potentially serious withdrawal symptoms, even at therapeutic dose levels. As a result, these drugs should not be prescribed without careful consideration of the risks associated with them; they should be prescribed only for short periods of time, and where dependence develops, withdrawal should be gradual and carried out under medical supervision, where this is possible.

Stimulants

Cocaine is the psychoactive ingredient of the coca leaf. It produces a sense of exhilaration and decreased feelings of fatigue and hunger. The Conference of Ministers of Health on Narcotic and Psychoactive Drug Misuse, previously mentioned, stressed the threat posed by cocaine, the spread of the abuse of coca paste and the worrying development of the abuse of free-base cocaine, a cocaine preparation that has been chemically modified to permit it to be taken by inhalation. "Free-basing" produces serious dependence in many of its users.

Similar effects to those of cocaine are produced by a number of synthetic substances, such as the amfetamines and related substances, including phenmetrazine, methylphenidate and various drugs that have been marketed for the treatment of obesity. Cocaine, the amfetamines, and some of the other synthetics can cause extreme excitement and short-lasting psychotic illness. These substances have a high dependence potential, although the

withdrawal symptoms seem to be limited to temporary feelings of fatigue, "let-down", and depression. The amfetamines have been marketed under hundreds of different brand names, and have been used as "diet pills". Dexamfetamine, levamfetamine, and metamfetamine have all been widely abused at some time. Amfetamine is currently being illegally manufactured on a large scale in the form of amfetamine sulfate (sometimes referred to just as "sulfate" by users).

Millions of people all over the world consume coffee and tea, both of which contain caffeine (tea also contains some theobromine). They are stimulants in that they alleviate mild degrees of fatigue, but their mechanism of action in the body is quite different from that of cocaine and the amfetamines. Generally, they produce very low levels of dependence, and withdrawal symptoms, if any, seem limited to some headache and fatigue.

Another drug that has similar "social" uses is khat, which is widely used in such countries as Democratic Yemen, Djibouti, Ethiopia and Somalia. Khat is a shrub, the leaves of which are chewed and the juice swallowed. The active ingredients are cathine and cathinone, which have actions similar to those of the amfetamines. Khat produces cerebral stimulation and is used to promote social interaction and release emotional tension. Among its adverse effects are sleeplessness, constipation and gastritis.

Hallucinogens

This group includes LSD (lysergic acid diethylamide), mescaline, peyote and certain other plant-derived or synthetic substances. These drugs have the capacity to induce highly complex psychological effects, including transcendental experiences of "other-worldliness", hallucinations and other types of perceptual distortions. Sometimes these experiences are bizarre and frightening—hence the "bad trip". Hallucinogens do not induce physical dependence.

Others

A handful of other drugs are very much a concern of this publication but do not fit satisfactorily into any one of the above four major categories or families. These are discussed below.

Cannabis is the generic name given to the drug containing plant products of Indian hemp: this plant produces an extraordinary array of psychoactive chemicals, the most important of which

is tetrahydrocannabinol or THC. The dried leaves or flowering tops are often referred to as marijuana or ganja (although ganja may also have a generic meaning), and the resin from the plant is referred to as hashish or "hash". Bhang is a drink made from cannabis. Cannabis appears to act as a depressant to some extent, but can also have hallucinogenic effects.

There is some doubt as to the proper place of the *volatile inhalants*, which include anaesthetic gases, glues, lacquers, paint thinners and so on. They may have some depressant and anaesthetic effects, but also seem capable of producing perceptual disturbances. Their chief danger is their physical toxicity. Solvent sniffing can become a habit, and in some users a considerable degree of compulsion to continue the behaviour develops.

There are a few other drugs that do not fit neatly into any of the categories listed above. They include *kava*, used in some of the Pacific islands, and *betel nut*, widely used in Asia and the Pacific basin, which contains arecoline. Still another is the synthetic drug *phencyclidine* (PCP), currently popular among some groups of young people in the USA, which, in low doses, causes a mixture of drunkenness and anaesthesia; at higher doses, however, perceptual alterations, hallucinations and sometimes psychotic reactions may occur.

Multiple drug abuse

Although this discussion has been concerned with the classification of individual drugs and the definition of drug types, in many parts of the world a pattern is emerging of multiple drug abuse, different drugs being employed either at the same time or consecutively, or haphazardly, as dictated by whim, availability and market forces. Such a pattern is often referred to as "polydrug use", and is perhaps the most frequent pattern among young city dwellers the world over who are heavily involved in drug abuse. In many cases, as old, culturally determined patterns of indigenous drug use are overwhelmed, new drugs mix with old; tobacco and alcohol are supplemented by sedatives, stimulants, and opiates.

Health problems

Range and severity of drug-related health problems

The main criteria for measuring drug-related health problems are excess mortality (mortality in drug users compared with mor-

tality in the general population) and excess morbidity (prevalence of diseases in drug users compared with prevalence in the general population). Mortality and morbidity must be interpreted as a consequence of complex interactions involving a wide range of factors: the pharmacological and toxicological properties of the drug(s) used, the combinations of drugs used, the accessibility of health services for drug users and their utilization, the nutritional habits and status of drug users, the route of administration of drugs, the quality of the social network and the social integration of drug users, etc. For instance, the probability of cirrhosis of the liver increases in undernourished alcoholics and the morbidity of many users increases with their alienation from society and consequent lack of adequate and timely health care. Of particular importance is the route of administration of drugs. Injecting drugs intravenously multiplies the risk, because of the possibility that contaminated needles and syringes may be used and that adulterants may be added to illicit heroin, amfetamines or cocaine. The excess mortality is mainly due to overdose, and to the infection and reactions linked to intravenous injection, which permits the rapid action of the injected drugs and the direct access of disease organisms and adulterants to the blood stream. A similar increase in mortality is seen when cocaine is inhaled or smoked rather than sniffed. Here, it is the rapid action and the difficulty of controlling the dosage that account for the additional risks.

Health problems associated with specific drugs

Opiates

A 200–1000% excess mortality among heroin addicts has been reported in the USA. The main cause of premature death is overdose, but there is a multiplicity of other causes, including anaphylactic shock, sepsis, endocarditis, hepatitis and violence, including a 300% excess suicide rate. There is also an excess morbidity from liver disease, infections, including AIDS (acquired immunodeficiency syndrome), and neurological conditions. Opiate dependence, especially heroin dependence, is also associated with stillbirth, fetal growth retardation, and neonatal morbidity. Most of this morbidity is not directly related to the pharmacology and toxicology of opiates, but rather to impairment of nutrition, lack of general hygiene, needle-sharing, and to the practice of diluting heroin with other substances.