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PSYCHOTROPIC MORBIDITY INDICATORS OF THE EXTENT OF DRUG-RELATED HEALTH PROBLEMS

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INTRODUCTION

One of the most important functions of W.H.O. is to facilitate efforts at national level to provide data on problems on health matters associated with the use of psychoactive drugs, and thus making it possible to take a drug control action.

The importance of the public health problems associated with drug use was emphasized by the 1971 Convention on Psychotropic Substances when it was stipulated that one of the criteria calling for control is the finding by W.H.O. that "There is sufficient evidence that the substance is being or is likely to be abused so as to constitute a public health and social problem .....". In 1978 in its 21st Report, The W.H.O. Expert Committee on Drug Dependence recognised that "non-medical drug use does not, of itself, or necessarily, constitute a public health problem. What is important is the degree of harm that may ensure from such drug use". It was emphasized that "strategies devised to investigate drug use must seek to determine not only the existence of the phenomenon, but also its extent, pattern of use, populations involved and possible harmful consequences".

The accurate assessment of the extent of drug-related problems (including dependence) in a community by direct epidemiological methods such as general population census, is probably impossible and certainly very expensive. Indirect methods such as surveys of morbidities have to be used instead, to assess changing patterns of use.

Because of intensive testing by the pharmaceutical companies most of the side-effects of psychotropic drugs are well known and in the current situation of widespread use and misuse, these side-effects may become public health and social problems. It should perhaps be pointed out that although side-effects can be defined as the unwanted effects of a drug, they are only perceived as 'problems' in conventional medical treatment if they are more serious than the condition originally being treated or if they interfere with or impair that treatment. Thus a 'drug-related problem' occuring in the context of drug abuse may be identical to an acceptable side-effect under different circumstances of drug administration.

Drug-related health problems, apart from acting as indicators of drug abuse are worthy of study in their own right. Awareness of such problems permits the development of more effective health and social services. As far as prevention is concerned, it is not just the drug-taking itself that must be considered but the harmful consequences too, and unless basic information is available about the patterns and nature of drug - use and the ensuing problems, policies will be instituted in a theoretical setting with no feedback to correct the preventive effort.

Studies of drug-related health problems may also expose significant geographical and cultural differences that may be having a profound effect on the manifestation of a 'side-effect' as a 'problem'. Among a large enough population of drug-users it is probable that even the most innocuous substance, may cause a 'problem'; however where significant differences arise in the prevalence of particular problems local socio-cultural and environmental influences may be interacting in an important way.

Alternatively, the universality of a particular problem may suggest the greater importance of the effects of the drug itself. The assessment of health and social problems due to drug use and the accumulation of data on these topics may be helpful in the development of safer drugs. It is possible to categorise these adverse effects as:

a) Direct Pharmacological Effects.
   1. Physical, e.g. opiate-induced constipation.
   2. Mental, e.g. L.S.D. psychosis.

b) Indirect consequences of drug action, e.g. trauma due to a fall because of ataxia in chronic barbiturate intoxication.

c) Consequences of the method of drug administration, e.g. hepatitis, abscess etc.

One way of finding out about drug-related health problems is to monitor public health data on the frequency of reports of various types of pathology, such as viral hepatitis, foetal damage, etc., on the assumption that these problems are closely enough linked to drug consumption to be reasonable indicators. The advantage of this method is its simplicity and low cost, and if data is gathered promptly and routinely, it should provide early information about the extent of psychotropic drug use. However, the simplicity and economy are offset by the lack of specifity of a particular morbidity for psychotropic drug use.

To give an extreme example, it would be hopeless trying to monitor psychotropic drug use by reports of skin-rashes; many drugs, both

psychotropic and non-psychotropic, can cause rashes, as can a variety of infections and allergic conditions. It follows that the disease or disturbance must be relatively specific for the drug in question and that the majority of cases reported must be due to the drug.

Another difficulty is that the monitoring of public health data depends on the identification of cases in different centres, with an epidemiological picture being built up by multi-centre reporting of fairly low frequencies. Case definition and case recongition will probably vary from centre to centre and may vary in time with changing medical awareness. Other factors also combine to make morbidity an unreliable indicator of drug use: the proportion of casualties presenting to medical agencies may vary at different times and at different centres and the percentage of those who take drugs and sustain a particular complication, may also vary from time to time. Hepatitis for example, at one stage in the U.K. appeared to be a reliable indicator of heroin dependence, but for a variety of reasons now seems to be a much less certain marker (1).

Because of difficulties such as these, attempts to design indirect indices of drug misuse, similar to those designed for alcohol, are unlikely to succeed although specific morbidities can be useful in providing an early warning of new drugs being misused or of geographical spread to new areas of involvement of new population groups.

When estimating the prevalence or incidence of a morbidity, clear definitions are needed of the following:

1) A case.

2) The total population from which cases are drawn

3) The time period being studied.

4) Type of estimate (e.g. point/period prevalence) and its degree of confidence.

There are several problems associated with the use of indirect indicators of drug use:

1) Each indicator is only an imperfect reflection of the drug problem.
2) It may not be clear whether a change in the indicator being used reflects a true change in drug abuse activity, or whether it is reflecting a change in the activity of the involved agency (the harder you search the more you find).
3) Other problems with data collection may introduce a bias that cannot be quantified.

Drug related health problems to which particular attention should be paid include:

Drug Dependence

Except for barbiturate and amphetamine dependence, there is, as yet, little evidence for the widespread abuse of most non-narcotic psychotropic drugs although using W.H.O. criteria it is reasonable to assume that all psychoactive drugs have some dependence-producing liability. Most reports are of individual cases and often imply that the patient's underlying propensity for drug abuse was more signigicant than the inherent properties of the drug. However, as psychotropic drugs become abused more frequently, particularly by individuals seeking psychic effects, any dependence-producing liability is likely to be exposed. An awareness of this possibility, (likelihood) and an alert approach to the diagnosis of dependence would mean that the delays of earlier years might be avoided or, at least, reduced as it took 30 years and 50 years respectively for the dependence producing potential of amphetamines and barbiturates to be appreciated (2-5).

Nevertheless, the difficulties of diagnosing dependence on psychotropic drugs should not be minimised. Whereas dependence on opiates involves drugs with which the general population are unfamiliar, psychotropic drugs are well known to many people and although some are prescribed for defined psychiatric illness, many are taken for personal and inter-personal problems. The difference between this type of use and use for personal pleasure, is much less than in pre-psychotropic days when non-dependent individuals took drugs only for specific physical conditions. The difficulty of coming to a decision about the dependence status of individuals attending accident and emergency departments for example, is illustrated by the considerable proportion (20%) assigned to the 'not known' category.

Many definitions are and have been commonly used in studies of drug-taking; addiction/habituation, dependence, abuse, misuse are some. In any attempt to monitor drug dependence, a clear definition must be provided (e.g. "the state of psychic or physical dependence, or both, in a person following administration of that drug on a periodic or continuous basis" (7).

Drug dependence may be diagnosed in individuals in a variety of different settings - Drug Dependence Treatment Units, prisons, remand homes, G.P.'s surgeries, accident and emergency departments. If accurate data is to be accumulated, <u>all</u> of the involved staff must be aware of their obligation to diagnose and to record the diagnosis of drug dependence.

In the United Kingdom, for example under the Misuse (Notification and Supply to Addicts) Regulation, 1973, a doctor is required by law to notify in writing the name, sex, date of birth and address of any patients whom he considers/ to be or reasonably suspects of being addicted to controlled

drugs (notifiable drugs, opiates plus cocaine). Most notifications are made by the staff of the specialised drug treatment units and the remainder are made mainly by prison staff and General Practitioners. A Central Index is then maintained by the Home Office of all notified addicts. This system, in theory very simple, could be extended to include dependence on any drug; in practice it only provides accurate information when all doctors who see/ treat dependent patients remember to notify them, and it seems that some doctors, mainly those in accident and emergency departments where many drug dependent patients are seen, are unaware of their statutory obligation to notify addicts (8). An alternative system for maintaining an index of dependent patients is exemplified by the system in Malta where the regulations concerning the prescription of drugs are unusual, if not unique, in that some psychotropic drugs are controlled more strictly than opiates. Any prescription for one of the controlled psychotropic substances (including Mandrax, Tuinal, Seconal, and amphetamines), requires authorisation from the Chief Government Medical Officer, the patient is notified as being in receipt of these drugs, regardless of his/her dependent status, and has to be identified by both the prescriber and the dispenser. This system thus incorporates notification along with strict control measures and could easily be modified to include any drug that became a drug of abuse (9).

Drug Overdoses.

The continuing epidemic of drug overdoses that is occurring in many countries is, in numerical terms, probably the most serious morbidity associated with psychotropic drug use (10-11). In London, for example, the annual prevalence rate, almost certainly an underestimation, was calculated to be 430 per 100,000 of the population (5). This vast number of overdoses is made up of those who take a drug-overdose accidentally, those who do so deliberately in a suicidal attempt or gesture and those who do so in the course of drug dependence in a search for heightened effect.

A rigid classification, such as this, ignores the fact that these groups are overlapping populations and that there are inter-related forms of drug misuse, which from a public health point of view cannot be dealt with in isolation from each other or from patterns of drug use within the population.

The majority of cases of drug overdose are seen in hospital accident and emergency departments which offer several advantages for undertaking research into drug-related problems, including drug-overdose: although accident and emergency departments may vary in different countries, some form of emergency facility exists in all health-care systems so that there is a ready-made and cost-effective set-up, readily available for monitoring drug-related problems. If valid results are to be obtained, however, the monitoring procedure must be planned very carefully. All studies should be prospective in nature because notes made in an emergency situation are rarely sufficiently detai for comprehensive data to be gleaned from them later. The conditions of a busy accident and emergency department must be kept firmly in mind, when the questionnaire is designed: it should elicit the maximum information but at the same time should be brief and simple so that the staff of the departments, whose responsibility is to the patient and not to research, can complete it easily. It should concentrate on factual rather than judgmental or descriptive data and all responses should be in terms of defined criteria that are easily quantifiable. All definitions should be operational rather than theoretical. Uniformity in tabulating results is essential if valid comparisons are to be made; for example, a decision must be taken at the outset about a uniform system for classifying age-groups and for recording and classifying the drug taken. A choice also has to be made about whether to study incidents or individual patients; the latter poses difficult problems of confidentiality which cannot be satisfactorily dealt with in a large survey, while at the same time providing

valuable information which probably cannot be obtained in any other way, about the hard core of drug misusers with a particularly serious drug problem (12).

Several large detailed studies have already been carried out in accident and emergency departments and have shown their valuse in monitoring drug overdoses and other drug-related problems. Careful planning and co-ordination is essential however, if the mass of information that can be obtained, is to be interpretable and useful (6,10-11).

Hepatitis B.

Hepatitis is an example of a complication of drug-abuse due, not to any particular drug, but to the method of drug administration. It frequently occurs in opiate, barbiturate and amphetamine addicts because of dirty injection habits, including the sharing of needles and is usually attributed to infective(serum type B) hepatitis. The discovery of Australia antigen and its association with serum hepatitis has provided a more specific test. Hepatitis in addicts is an interesting example of a morbidity, the incidence of which appears to have changed with time. Whereas once it was a very useful indicator of heroin dependence in the U.K., it has been less successful recently because jaundice, hepatitis and gross abnormalities of liver function appear to occur less frequently now in addicts. Whether this change is due to a reduction in injecting activity or to a true improvement in injection technique is not clear. It shows very clearly that the percentage of people using a particular drug and suffering a particular complication may vary and emphasises that it is very unwise to rely on one indicator in isolation for a picture of drug abuse. There are two main problems in using hepatitis data:

Firstly, there are many causes of hepatitis B: In addition to drug abuse it can be transmitted by blood transfusion or sexual contact, can

be associated with certain occupations or diseases (e.g. haemophilia) and can sometimes occur with no apparent contact.

Secondly, hepatitis B is imcompletely and irregularly reported and there may be difficulties with the sensitivity and specificity of the diagnosis of hepatitis B in some laboratories.

Hepatitis however, is a better indicator of the incidence of drug-use than of prevalence. Nevertheless, it is still worthwhile to screen drug dependent patients for hepatitis and to maintain a register of those suffering from it. Even if it is an unreliable quantitive indicator of drug abuse, it is a serious drug-related health problem and if it is monitored and recorded routinely and systematically any extension of drug injecting to new areas will be picked up easily (13).

Other Infective Complications

Certain other infective complications occur characteristically as a result of non-sterile injection techniques. They include septic injection sites, abscesses, pneumonia, septicaemia and endocarditis. These complications are often atypical in addicts, caused by uncommon organisems and are often difficult to treat. Again, if information about this complication is recorded in a systematic and accessible fashion, it would be another way of monitoring injecting activity (13). The recently described aquired immune deficiency syndrome (AIDS) may in future be another indicator.

Neo-natal Problems

Drug-related problems affecting the newborn are, of course, an area of particular concern. They fall into two groups: Drug withdrawal syndromes have been described in infants born to mothers dependent on opiates, barbiturates and possibly amphetamines, and two illicit drugs that have been implicated as teratogens, are L.S.D. and cannabis. Unfortunately, there has been little sound systematic research into this problem and anecdotal accounts

of congenital deformities in infants born to mothers who have taken drugs in pregnancy do nothing to prove the case, particularly if their condition is one of high background incidence.

If this serious public health problem is to receive adequate evaluation a record of all drugs taken in pregnancy should be made routinely in the obstetric notes. Obviously, some patients may be unwilling to admit drug use, particularly if it is illicit but the gradual accumulation of data will enable more rational conclusions to be drawn and will point the way for further drug control measures (14-17). In some countries where opium is used for the sedation of infants the associated risks, including deaths due to overdose could be evaluated from a survey of the paediatric units.

Drug Psychosis.

As psychotropic drugs are taken specifically for their psycho-active effects, adverse psychological reactions are to be expected if these drugs are misused in excessive quantities or in combination with other drugs. Acute toxic psychotic reactions may be caused by some psychotropic drugs (e.g., L.S.D., cocaine, amphetamines and other synthetic stimulants), and the frequency of adverse reactions is almost impossible to ascertain: for drugs such as L.S.D., or cannabis which are often taken in a group situation, the nature of the reaction probably depends as much on the personality of the drug-taker, the setting and the expectations of the subjects, as on the drug itself. Many reactions are probably dealt with satisfactorily by companions, participating in the drug-taking experience and only the more serious ever come to medical attention (13, 14, 18-19). Furthermore, as the psychotic illness may be more or less indistinguishable from schizophrenia, it is often difficult to decide causality. For all of these reasons, drug psychosis is unlikely ever to be an accurate epidemiological indicator. Nevertheless, if cases were recorded by psychiatric hospitals, psychiatric outpatient clinics and accident and emergency departments etc., in a systematic and accessible way, a more complete picture

of the prevalence of this complicated picture might begin to emerge.

Amphetamine psychosis is a good example of how an alert attitude to diagnosis can increase epidemiological information. Unrecognised until 1958, large series of cases have since been reported by many physicians, probably because they were looking for it specifically, with the help of chemical tests for drug detection(18).

Convulsions Chronic Pain

Surveys in departments of neurology and electroencephalography may reveal patients referred for the investigation and treatment of convulsions, the cause of which is sedative-hypnotic withdrawal;
E.E.G. may contribute to the diagnosis of the use of these drug. It is also possbile that among those attending pain clinics, a proportion may misuse analgesics and are dependent upon them.

Analgesic nephropathy

Although minor analgesics cannot be classified as psychotropic drugs as such, those who misuse them resemble, in many imprtant ways, those who use psychotropic drugs. A patient often denies analgesic misuse and many go to considerable lengths to conceal it. Many misuse other drugs too and admit that they take analgesics for the feeling of well-being that they induce. For all of these reasons and because analgesic misuse is numerically a very serious drug problems which does not fit neatly into any category, it seems reasonable to include it in this paper. Analgesic nephropathy, like amphetamine psychosis, is an example of how medical case reports may draw attention to a previously over-looked condition and thereby provide reliable epidemiological information. Once again, records should be kept of these cases in a systematic and accessible way (20-21).

Discussion

As the consumption of psychotropic drugs continues to increase, their morbidity, in terms of public health problems is likely to increase too. Already, all of the drug-related problems discussed in this paper are run-of-the-mill, ordinary and unexceptional; in other words, lots of these cases are being seen all the time (22). In some London Hospitals, for example, patients with drug-related problems form more than 1% of the total casualty load. It follows therefore, that the opportunity exists to do some basic epidemiological research: The cases are not unidentifiable, 'out-there' in society, they are making frequent contacts with medical agencies. Clearly the information obtained will be incomplete, the samples studied being unrepresentative and atypical, but as long as its limitations are understood some information is surely better than none at all.

The present problem is that the patients are seen, often in different departments, are followed up, treated and/or discharged. The case notes are written up, the notes are filed and valuable information about a patient with a drug-related problem becomes inaccessible in the medical records department. In crude terms what is needed is a list or perhaps lots of lists so that all this information is readily available. For example, if every accident and emergency department routinely kept a list of all patients attending with a drug overdose, it would be quite easy to establish how many overdoses there were each year, seasonal trends, regional variations, etc. At present, to elicit this information requires retrospective searches (nearly always unsatisfactory) or specially planned research in a few hospitals and then the data obtained is far more limited than if a simple list were kept routinely.

Obviously, the more information recorded in an accessible way, the easier it will be to build up a complete picture of the morbidity being studied.

For example, if the primary list also contains data about age and sex, a whole new dimension is built into the epidemiological picture. In the absence of computer facilities it might not be possible to record more than very basic information, but the mere existence of a list would enable complete retrieval of all relevant case notes. Within these records, certain information (e.g., number of drugs taken, which drugs taken etc.) should be recorded in a pre-arranged standardised format. It is then easy to extract this information and to build up a composite picture.

The example given here of keeping a record of drug overdoses is just one example - a list could also be kept of cases of analgesic nephropathy, of drug psychosis, of drug dependence, etc. In addition, as has already been suggested a list of all drugs taken at any stage of pregnancy should be kept routinely in all obstetric notes and in cases of road traffic accidents and industrial accidents, any drugs taken should be recorded as routinely as the nature of the accident. The important point about these records is that they should be routine. Obviously if computer facilities are available, more complicated information can be stored, cross-referenced and centralised, but these facilities are not essential.

In summary what is needed is coordinated research on a large scale to record in a useful and accessible way, information that is already available but often inaccessible. The measures suggested here would not be expensive to implement and they need not increase the work of the staff whose primary responsibility is to the patient and not research. If questionnaires are well designed, for example, all that would be required of the staff would be to record routine information in a new standardised way. One valuable aspect of such research is that it is on-going and continuous; this is important because it unfortunately takes far longer to collect data about drug problems than it does for the misuse of any particular drug to escalate to significant proportions. Information is therefore always behind the times and out-of-date before action

can be initiated, let alone take effect.

Clearly no survey is ever going to provide all the answers but the inadequacies and incompleteness of research should not be considered an excuse for doing none at all. Repeated studies, albeit of atypical and unrepresentative samples can complement each other and can contribute to a greater understanding of drug-related problems.

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