

An epidemiological assessment of drug dependence in Malaysia – A trend analysis

V. Navaratnam, BSc, DipNeuroSc, MSc, PhD
Associate Professor/Director

K. Foong, BSc, MSocSc
Research Officer

*National Drug Research Centre
Universiti Sains Malaysia
Minden, 11800 Pulau Pinang*

Summary

Information from the national drug abuse monitoring system was analysed to determine the trends in extent and pattern of drug dependence in Malaysia over the period 1970 to 1986. The annual incidence and prevalence rates of reported drug dependents increased by many folds when compared to the early seventies. Generally, the profile of drug dependents identified has remained relatively stable throughout the years. A stable pattern of drug abuse was also noted over this period. Factors influencing the trend patterns are discussed, as well as the implications of these findings for policy purposes.

Key words: Epidemiology of drug dependence, drug abuse monitoring system, drug dependence, patterns of drug abuse.

Introduction

Drug dependence is unique among contemporary problems in the breadth of its impact on Malaysian society. Public recognition of the widespread problem of illicit drug use has resulted in the enactment of new laws, which have led to a larger enforcement force. Consequently, many more arrests have been made and concurrently harsher penalties have been imposed for drug trafficking. Treatment, rehabilitation and prevention programmes have been created whilst research efforts have also been initiated.

Assessment of the prevalent drug dependence situation in a country is crucial for the development of national programmes in the areas of prevention, law enforcement, treatment and rehabilitation and legislation. Information about drug users, their numbers, their location, how and when they were involved and other related factors, can aid policy makers and programme planners to arrive at decisions on the extent of effort required to deal with drug-related problems and where the emphasis ought to be placed.

In Malaysia, opium use has been a historical feature. For example, in 1929 there were 52,313 registered opium smokers in the Federated Malay States. Similarly, Tan and Haq¹ reported that cannabis (ganja) was frequently used, particularly by Malays, for various medicinal purposes. Whilst there exists such historical records there are few published studies on the contemporary

problem of drug dependence in Malaysia and exclusively these studies have been on known population of users, for example those who presented themselves at hospitals/clinics^{2,1,3,4,5} prisons⁶ or secondary school students.^{7,8,9,10}

Obviously these studies, though providing valuable information, were reflective of the drug dependence amongst these specialised groups. To gain an overall picture of the drug dependence problem in Malaysia a second strategy adopted at the National Drug Research Centre, Universiti Sains Malaysia was the development of the National Computerised Drug Dependence Monitoring System.^{11,12}

This system is an information management system which entails the gathering, processing, analysis and presentation of information required for planning and implementing services, relating to the control, prevention, treatment and rehabilitation of drug dependent persons in this country and also for research and training.

This paper presents trend analyses of the extent and nature of the drug abuse problem in Malaysia over the period 1970 to 1986. These analyses are based on data collected from the first reports of all addicts identified by the concerned agencies and reported to the national drug dependence monitoring system.

Methodology of the National Drug Dependence Monitoring System (NDDMS)

Currently, six government agencies are linked to the system. They include three law enforcement agencies (the Police, Prisons and Customs), drug dependence treatment centres (all hospitals and rehabilitation centres) and all dadah centres under the Ministry of Home Affairs. All the agencies are major institutions in Malaysia which come in contact with drug addicts. Each agency provides information on quite a distinctive subgroup of addicts, which may or may not reflect completely the epidemiological profile of the using segment of the general population. The methodology has been described in a previous publication.¹³

The extent of drug dependence is measured by the relative incidence and prevalence of the problem. This refers to cases reported for a specific population by a particular source. It is impossible for any national monitoring system such as NDDMS to have complete access to the total user population. Hence relative incidence is used here because absolute incidence cannot be ascertained. Further this system was designed as a policy information and not a legal control effort. Hence, drug dependent individual records includes persons who have no legal charge under the Dangerous Drug Act but have been professionally diagnosed to be dependent on drugs.

Bewley¹⁴ has argued that the number of cases in contact with existing agencies is an indicator of the total number of cases including those not in contact and that changes in the former usually reflect changes in the latter. Using this argument then trends shown by known drug users, can be considered as sufficiently reliable indicators of the extent and pattern of drug dependence situation in Malaysia.

The monitoring system provides data on the number of events or contacts, individuals or cases with each reporting agency and cases registered by the system, and new cases of drug abusers who were ascertained by the various agencies. Events refer to the number of drug-related hospitalisations, arrests, etc. occurring during a specific period of time, for example, a year. Cases registered by the system were determined by linking events that were recorded by different agencies for the same individual.

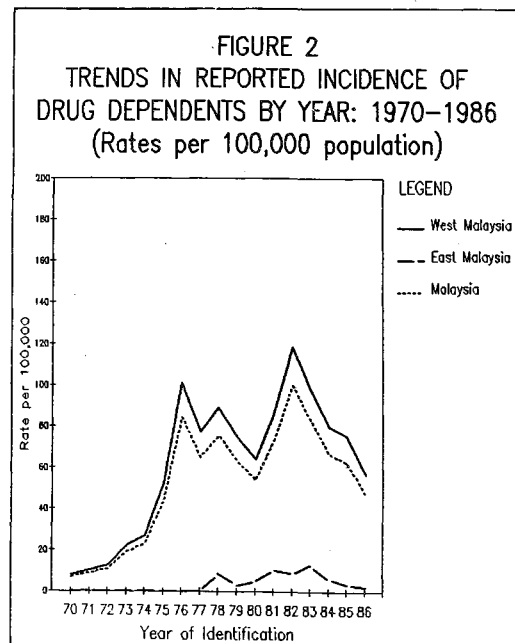
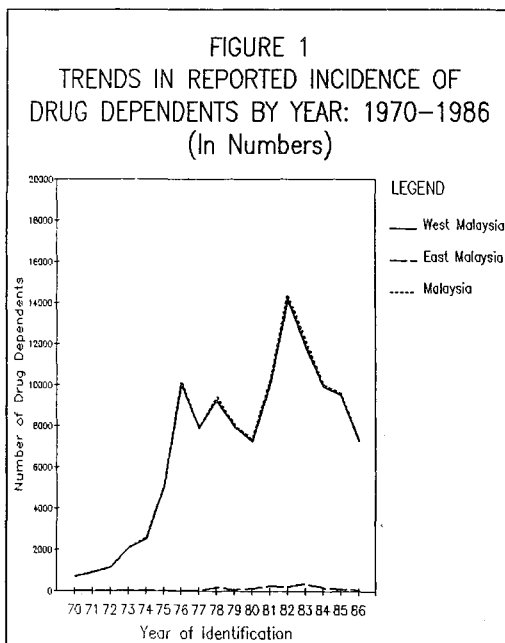
Results

(A) Incidence of reported drug dependents in Malaysia: 1970–1986

Fig. 1 presents the incidence of reported drug dependents in West and East Malaysia, and Malaysia as a whole. The drug dependence problem is primarily a West Malaysian problem.

The annual incidence of known drug dependent persons in Malaysia has increased substantially since 1970. In 1970, a total of 711 individuals were identified and by 1975, 5,078 individuals were identified, a seven fold increase. The total identified in the subsequent year doubled that of 1975. The incidence in the subsequent years has declined slightly but has remained relatively higher compared to the early seventies. The early eighties recorded a significant increase to a highest peak of 14,334 new individuals contacted in 1982. However, a downward trend was observed since 1983. By 1986, only 7,329 new individuals were identified by the reporting agencies.

The incidence rates are expressed in terms of a base population of 100,000. Rates are computed using census population figures of all age groups (Fig. 2). In 1970, the reported incidence of drug dependents in Malaysia was 6.8 per 100,000 population. There was a gradual increase in the annual rates in the early seventies followed by a very steep increase in rates since the mid-seventies. It increased from 22.4 in 1974 to 43.5 in 1975 and to 84.3 in 1976. There were substantial fluctuations in the annual rates from 1977 to 1981. The incidence rate declined from 75.2 per 100,000 to 62.7 in 1979 and further to 53.6 in 1981, and rose again in the subsequent years. These fluctuations may be associated with the case of availability of drugs. In 1978/1979, the opium crop in the Golden Triangle was badly hit by drought and disease, which resulted in a severe drug shortage. This probably explains the decline in incidence of new cases in 1979 and 1980. Bumper harvests coincided with the rise in incidence in the years 1981 to 1983.



Besides the increased supply of drugs in the early eighties, there was also an increase in effective law enforcement activities, resulting in an increased level of detection since 1981.

A declining trend has been observed since 1984. The incidence rate declined significantly from 82.8 in 1983 to 66.5 in 1984 and finally to a lowest point of 46.5 per 100,000 by 1986.

(B) Prevalence of reported drug dependents in Malaysia: 1970–1986

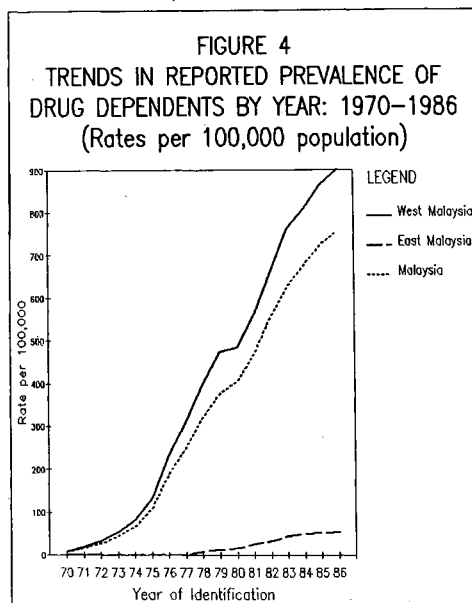
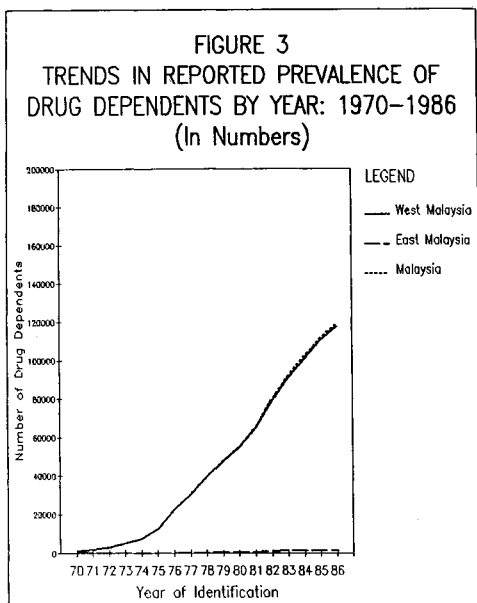
Fig. 3 shows the estimates of known (reported) prevalence of drug dependents in Malaysia for the period 1970 to 1986. The life prevalence measure is used here. A drug dependent identified in 1970 and registered then, would still be considered an addict in 1986, unless his drug abuse career is known to have ended. Using this as a measure, one finds that by 1986, Malaysia has an estimate of 119,001 known addicts. Almost all (98.8%) are West Malaysians.

The reported prevalence rate of drug dependents in Malaysia rose from 6.8 per 100,000 population in 1970 to 754.6 per 100,000 population in 1986, or 111 times higher than the recorded rate for 1970 (Fig. 4). Since the recording of known drug dependents began only in 1970 when a total of 711 addicts were identified, this figure has been used for determining both the incidence and prevalence rates for that year. The prevalence rate has increased gradually in the early seventies from 6.8 in 1970 to 106.9 in 1975. Dramatic escalation in the rates were observed in the last ten years.

The reported prevalence rate of drug dependents is even higher in West Malaysia alone. It rose from 8.1 per 100,000 population in 1970 to 899.3 per 100,000 in 1986 or 111 times higher compared to the 1970 rate.

(C) Trends in socio-demographic characteristics: 1975–1986

A study of drug dependent persons brought to the attention of the authorities in Malaysia over a 12 year period (1975–1986) provides the basis for an analysis of changes in the personal characteristics and patterns of drug use of the drug dependent population over time.



There has been no significant change in sex, marital status and age distribution trends since 1975. The problem of drug abuse is mainly found among young males who are usually unmarried. Almost all (more than 96%) of this identified population each year were males, and almost three out of four drug dependents were single.

A great majority of the drug dependents identified each year were in their twenties. However, some fluctuations in percentages of certain age categories have been observed over the years. The proportion of drug dependents in their school-age range increased from 11.8% in 1975 to 24% in 1977 and has declined since 1979, to a stable percentage of about 10%. The proportion of drug dependents in their thirties has increased gradually over the years from 9.3% in 1975 to 24% by 1986 (Table I).

About half (47.6%) of the total reported addicts over the period were Malays (Fig. 5). One in three were Chinese. Indians accounted for slightly more than 10%. Except for the years 1979 and 1980, all other years recorded a larger proportion of Malays contacted among the total drug users. The Chinese were the next largest group followed by the Indians.

Although there were some fluctuations in percentages of drug dependents identified of various ethnic groups, on the overall the percentages are similar to those for the national population distribution. Reports on foreign drug dependents have appeared only since 1982 and the proportion, although very insignificant, is on the increase.

About half (44.4%) of the reported drug dependents were employed as labourers. One in four were unemployed (Table II). White-collared workers accounted for a small proportion (3.2%) of the total. Less than 2% were students.

Table I
Trends in percentage distribution of reported drug addicts
by current age: 1975–1986

Current age (in years)	Year											
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
	(227)	(1610)	(1871)	(3768)	(5595)	(3795)	(5953)	(10168)	(8169)	(6285)	(6356)	(4542)
Less than 15	—	0.4	0.1	0.3	0.2	0.3	0.3	0.1	0.2	0.1	0.1	0.1
15 – 19	11.8	22.9	23.9	17.3	11.9	10.8	9.6	9.1	10.2	10.6	10.0	9.3
20 – 24	47.8	45.4	44.7	43.0	36.8	33.7	34.2	33.0	32.1	33.9	34.6	31.8
25 – 29	25.9	19.2	20.0	21.3	27.7	29.3	30.7	31.2	30.9	29.2	28.1	28.0
30 – 34	7.5	6.2	6.0	8.7	10.9	11.7	13.6	14.8	14.9	14.5	15.7	16.9
35 – 39	1.8	2.3	1.7	2.5	4.6	4.1	4.9	5.0	5.3	6.0	6.4	7.1
40 – 44	1.3	1.3	1.2	1.9	2.3	3.1	2.4	2.3	2.6	2.2	2.0	2.8
45 – 49	2.6	0.6	0.5	1.3	1.6	1.9	1.1	1.4	1.2	1.1	1.2	1.4
50 – 54	—	0.4	0.3	0.8	1.1	1.5	0.9	1.0	0.8	0.7	0.6	1.0
55 and above	1.3	1.3	1.6	2.9	2.9	3.6	2.3	2.1	1.8	1.7	1.3	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

FIGURE 5
TRENDS IN PERCENTAGE DISTRIBUTION OF
REPORTED DRUG DEPENDENTS BY ETHNICITY
1975-1986

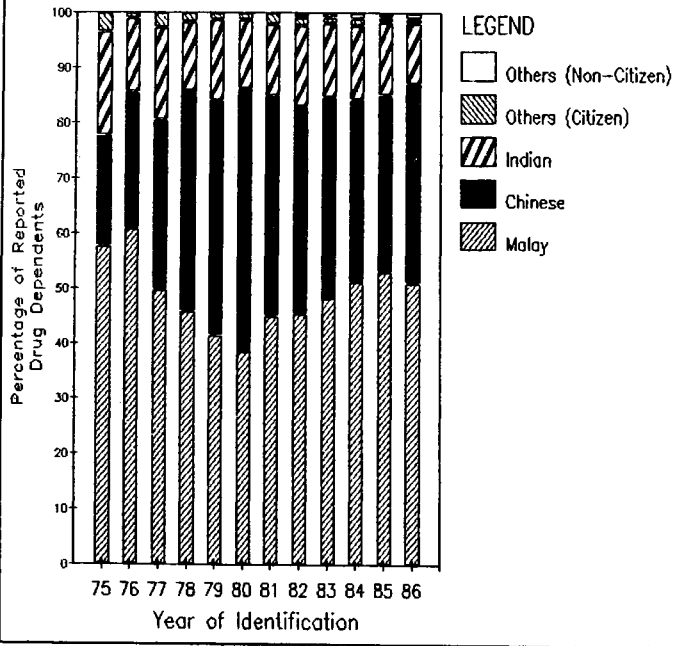


Table II
Trends in percentage distribution of reported drug addicts
by occupation: 1975-1986

Occupation	Year											
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
	(227)	(1610)	(1871)	(3768)	(5569)	(3795)	(5953)	(10168)	(8169)	(6285)	(6356)	(4542)
Student	3.1	8.8	7.7	2.8	1.6	1.5	1.2	0.8	1.1	0.8	0.9	1.2
Unemployed	46.0	32.6	30.0	50.0	48.0	36.6	18.9	16.1	14.8	18.0	18.6	20.7
Labourers	27.6	30.5	29.8	28.3	31.9	38.6	48.4	51.0	51.1	48.1	52.3	53.2
Shop assistant	4.4	7.0	5.7	3.9	4.7	6.2	7.3	7.5	8.2	8.3	7.5	6.3
Clerk	4.0	6.0	5.9	2.8	2.4	2.7	3.5	2.0	1.9	1.3	1.3	1.1
Skilled worker	5.3	4.9	3.9	4.7	4.0	4.7	5.6	5.9	5.1	3.4	2.8	3.2
Professionals	0.4	1.9	1.1	1.8	0.9	1.3	1.5	0.9	0.7	0.3	0.3	0.6
Others	9.2	8.3	15.9	5.7	6.5	8.4	13.6	15.8	17.1	19.8	16.3	13.7
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

An increasing proportion of employed individuals have become involved in drug dependence over the years. It increased from 50.9% in 1975 to as high as 84.1% by 1983. This could be attributed to the increased cost of drugs and thus the need for more finance to support the habit. Labourers dominated the group of employed over the whole duration. White-collared workers accounted for only a small proportion (less than 5%) of this population.

More than half (58.1%) of the employed drug dependent individuals earned below 351 ringgit per month. One in three earned between 351 and 600 ringgit. An upward trend in monthly income earnings has been observed since 1979 but this was to be expected as there was a changing trend from unemployed to employed.

About 40% of the reported cases had previous arrest records. About one in three had previous convictions (31.0%) and incarcerations (28.6%). There was an upward trend in reported criminality among dependents reported over the years. Between a range of 75 to 97% of the crimes committed by addicts reported each year, were for possession of drugs.

(D) Trends in pattern of drug dependence: 1975–1986

In general the majority (66.8%) of the drug dependents detected over the period had initiated drug use between the age of 15 to 24 years (Fig. 6). Trends in the age at onset of drug use indicates a significant change towards an older age of initiation. Prior to 1979, a majority of drug dependents, reported each year, had initiated drug use in their teens. However since 1979, the majority had started drug use in their twenties. This finding must be viewed cautiously since the changes in the socio-legal environment within the country has made reporting of drug use more discriminate. For example, among studies in school children, it was found that experimental (recreational) use of drugs was not equated to drug abuse.¹⁵ What probably was occurring was since about 1979, individuals began reporting year of addictive drug use, whereas previously initiation included experimental use. This inference is supported by on going studies where adolescents clearly discriminate between both behaviours.¹⁶

Peer influence, the major reason (53%) for initiation to drug use, has continued to be an important factor. However, initiation to derive pleasure, a reason cited infrequently (19%) in the year 1975 has become increasingly significant over time (55% in 1984). Curiosity, as a reason for initiating drug use also showed a similar trend. This was particularly unexpected since one would have predicted a downward movement in view of the significant mass media efforts. There was no major variation in trend in regards to reasons such as emotional problems, financial problems, etc. which were also cited though not very frequently.

Heroin was the primary drug abused by an overwhelming majority (over 80%) of dependents at the time of contact (Fig. 7). Nicotine (cigarettes) was the next most frequently used substance. Comparatively, marihuana and alcohol were used to a much lesser extent. The use of psychotropic substances such as tranquillizers, barbiturates, amphetamines and LSD was very uncommon (Fig. 8). The pattern of drugs currently abused has been stable over the last 12 years, with heroin remaining the most frequently abused drug. The use of other drugs were comparatively small. Almost all (90.2%) of the drug abusers reported each year were daily single drug users. The proportion of multiple or poly drug daily users was insignificant. However, an upward trend in number of poly drug users was noted over the years.

A majority (73.2%) of reported dependents had four years or less duration of drug use. Closer

FIGURE 6
TRENDS IN PERCENTAGE DISTRIBUTION OF
REPORTED DRUG DEPENDENTS BY AGE AT
ONSET OF DRUG USE: 1975-1986

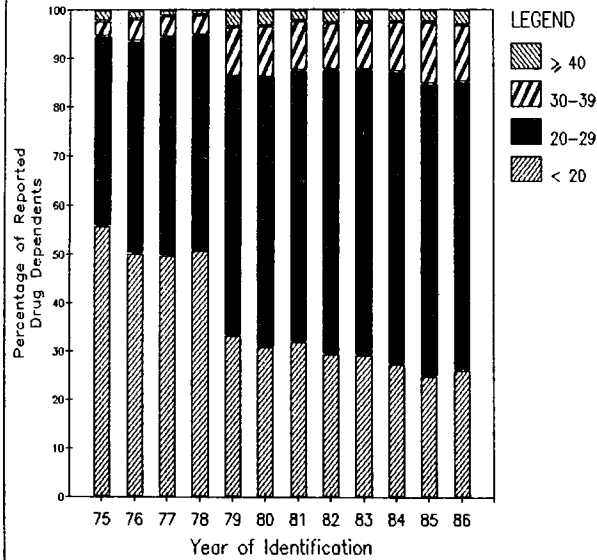


FIGURE 7A
TRENDS IN PERCENTAGE OF REPORTED
DRUG DEPENDENTS BY DRUGS EVER USED
1975-1986

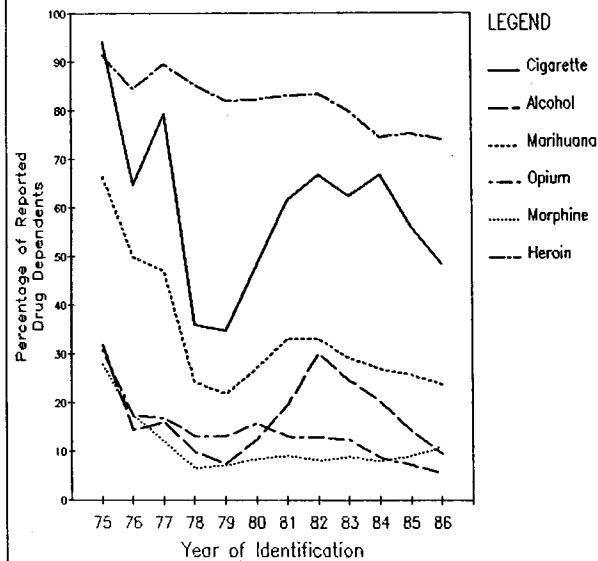


FIGURE 7B
TRENDS IN PERCENTAGE OF REPORTED
DRUG DEPENDENTS BY DRUGS EVER USED
1975-1986

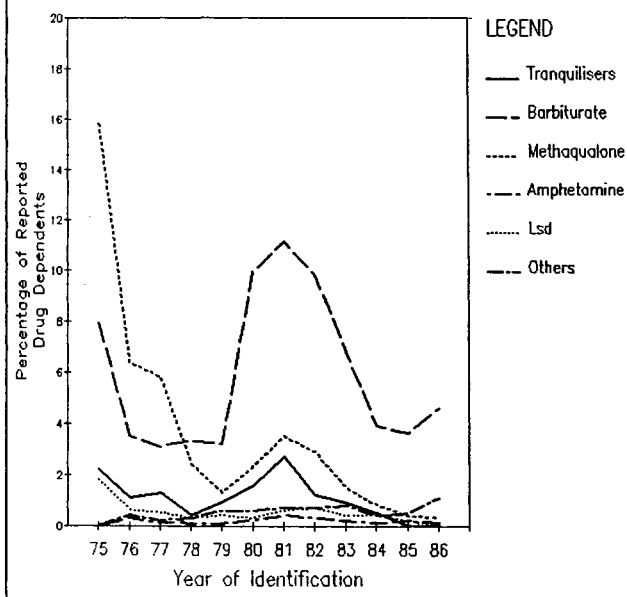
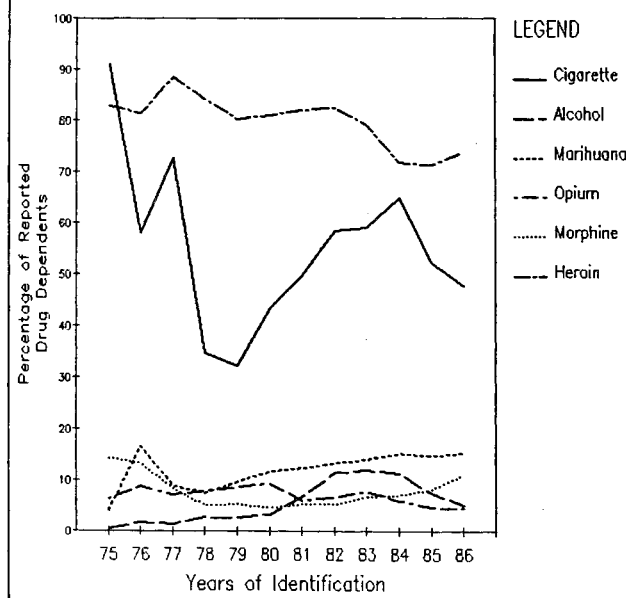
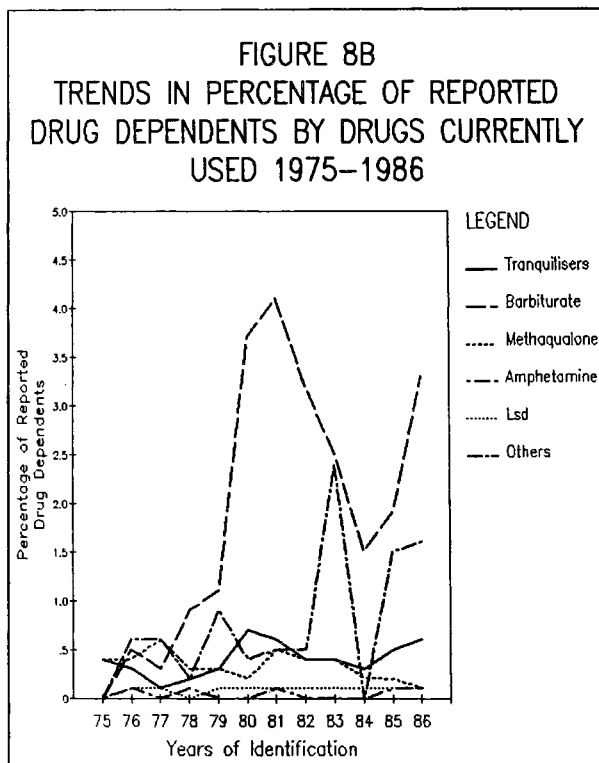


FIGURE 8A
TRENDS IN PERCENTAGE OF REPORTED
DRUG DEPENDENTS BY DRUGS CURRENTLY
USED 1975-1986





examination of the data showed that the number of person who had used drugs for two years or less have slowly continued to increase, whereas those who had used it for periods between 2.1-4 years declined gradually slacking at around the 20% levels. On the other hand the population of abusers who had used it for periods of ten years and over has also gradually increased to, a peak of 7.1% in 1980 and stabilised since to about 6% of the total dependence population. These results would imply that whilst there has been an increase in the extent of identification of “new recruits”, the number of chronic abusers has gradually increased and currently constitutes a significant problem.

The trend pattern for daily expenditure on drugs as expected reflects a similar pattern to that shown for duration of use. More than 60% of the dependents reported spending MR\$10/- or less on their habit. This would correspond roughly to those who had been abusing drugs for less than four years. Similarly around 18% were spending MR\$16/- and above daily which would be equivalent of the chronically abusing group. Thus the available information supports the finding that the amount of drug consumed (as measured by amount of money spent) is related to the duration of abuse.

Over the whole duration of study, drug pushers, who were also abusers, were the most common source/supplier of drugs (as reported by about 70%). Friends of the abusers represent another major source for drugs. These friends could possibly be drug pushers.

Discussion

The heroin epidemic which begun in the late 1960's and early 1970's marked the beginning of a new drug abuse trend in Malaysia, replacing the traditional pattern of opium use. The

magnitude of the problem as indicated by the incidence and prevalence of reported drug dependents grew substantially, among the young adult population. This increase was influenced by two factors – the increasing number of individuals getting involved in drug dependence and the intensive law enforcement activities. Fluctuations in reported incidence rates over the years such as from 1977 to 1981 were associated with the supply of drugs from the producing countries in the Golden Triangle.

There has been a decline in incidence rates of reported drug dependents since 1984 which could be attributed to the resultant increase in community and individual awareness of the consequences of drug dependence, hence lesser numbers of persons experimenting with drugs, and the effective conjoint application of law enforcement activities and judicial measures. Assuming other factors remain constant, this is evidence to indicate that the magnitude of the drug dependence problem is on the decline and should continue to do so.

However, the persistence of a high prevalence of drug dependence throughout the whole period may be attributed to a number of factors. These include low mortality rates resulting from drug dependence, the small numbers of drug dependents undergoing and successfully being treated, the high rates of relapses as well as low numbers of self abstainers.

Generally, the characteristics of known drug dependents and the patterns of drug abuse have remained rather stable over the years 1975 through 1986. The bulk of the known drug dependents identified each year were in their twenties, unmarried males who were either unemployed or were employed as labourers. A relationship between involvement in drug dependence and criminality was noted.

Heroin remains the major drug of abuse and the source of drug-related health and social problems in Malaysia. Marijuana and alcohol were used regularly by a sizeable proportion of known drug dependents. Other opiates such as opium and morphine were used to a lesser extent with the use of psychotropic substances being rare.

An overwhelming majority of the known drug dependents had initiated drug use before the age of twenty and have had less than four years of duration of drug use. An increasing trend in numbers of chronic abusers with ten years or more of drug use involvement was noted. Peer influence remains the major reason for initiating drug use.

There was an emerging trend of poly drug use over the period. This poses a potential problem for the future and supports the finding of a recent study which found that heroin abusers used a combination of heroin and other drugs such as cannabis, alcohol, tranquillizers and sedatives to enhance the effect of heroin or to suppress withdrawal symptoms.¹⁷

The trends in drug abuse situation discussed above have important implications for policy making, planning and management of the problem in the country. The declining trend in growth of the problem in recent years suggests that the prevention programmes and law enforcement measures have reduced the extent of drug use experimentation and hence drug dependence. These measures should continuously be emphasised and intensified to reduce illicit demand.

In view of the current magnitude of active drug abusers, there is a need to increase the provision of more effective drug abuse treatment and rehabilitation services. The growing problem of chronic abusers requires the development of more appropriate management approaches in order to reverse the trend.

It continues to be of concern that in spite of concerted efforts to combat the drug abuse problem, its prevalence remains high. Generally, the anti-drug abuse measures so far have had some impact in reducing the problem. Obviously more evaluation research into the effectiveness of the various drug abuse policies and programmes is required in order to clearly ascertain the strengths and weaknesses of each measure in order to further improve its effectiveness.

Based on the assessment of the current drug abuse situation and past trends, it is possible to make certain predictions of future trends. Heroin abuse among the young adult population will continue to be the major problem. The general patterns of drug use and the characteristics of drug dependents are predicted not to vary significantly in the future. The phenomenon of poly drug use however will increase over time and pose increasing risks to health aspects of these individuals.

References

1. Tan E S, Haq S M. Drug abuse in Malaysia. *Med J Malaysia* 1974; 29 : 126-130.
2. Tan E. S. A preliminary survey of drug dependence in the State of Penang, West Malaysia. *Mej J Malaysia* 1973; 28 : 23-28.
3. Navaratnam V. Epidemiology of drug abuse. *Bull Publ Health Soc* 1975; 10 : 17-22.
4. Navaratnam V, Spencer C P. A study on socio-medical variables of drug dependent persons volunteering for treatment in Penang, Malaysia. *Bull Narc* 1978; 30 : 1-7.
5. Deva M P. A survey of 47 opiate dependent persons who sought treatment. *Med J Malaysia* 1977; 31 : 183-187.
6. Navaratnam V, Spencer C P. The drug user and the law: A survey of drug offenders before the courts and in prison, Penang and Selangor states. Centre for Policy Research, Universiti Sains Malaysia, Penang. Project Paper Series No. 7, 1977.
7. Navaratnam V, Spencer C P. Patterns of drug user amongst Malaysian secondary school children. *Drug and Alcohol Dependence* 1980; 5 : 379-391.
8. Navaratnam V, Spencer C P. School background and attitudes towards drugs as predictors of drug use among Malaysian students. *Drug and Alcohol Dependence* 1980; 5 : 411-419.
9. Navaratnam V, Spencer C P. Social attitudes, self-description and perceived reasons for using drugs: A survey of the secondary school population in Malaysia. *Drug and Alcohol Dependence* 1980; 5 : 421-427.
10. Navaratnam V, Spencer C P. Legal sanctions and information about drugs as influences upon the decision by adolescents whether to use illicit drugs. *Drug and Alcohol Dependence* 1981; 6 : 315-322.
11. Navaratnam V, Lee B A. National data bank on drug dependence in Malaysia. Proceedings from a Workshop on Reduction of Demand for Illicit Drugs in South-East-Asia, Penang, 14-20 May, 1978. Colombo : The Colombo Plan Bureau. 1979.
12. Foong K, Navaratnam V. Assessment of drug dependence in Malaysia - A trend analysis. Centre for Drug Research, Universiti Sains Malaysia, Penang, Monograph Series No. 6, 1987.
13. Navaratnam V, Foong K. Drug abuse monitoring systems - development and application: A Malaysian experience. *Bull Narc* (in press).
14. Bewley T. Proceedings of the society for the study of addiction. Society for the study of addiction, London. 1966.
15. Choo Piang Foong, Maznah Ismail, Navaratnam V, Hoo See Kong. A comparative study of the psychosocial profile of drug using and non-drug using school children. Drug Research Centre, Universiti Sains Malaysia, Penang. Research Report Series No. 13, 1986.
16. Hoo S K, Navaratnam V. Kajian tentang ilmu pengetahuan dan sikap terhadap penggunaan dadah pelajar-pelajar sekolah menengah. Pusat Penyelidikan Dadah dan Ubat-ubatan, Universiti Sains Malaysia, Pulau Pinang. Siri Laporan Penyelidikan No. 19, 1988.
17. Navaratnam V, Foong K. Natural history of heroin addiction and adjunctive drug use. Centre for Drug Research, Universiti Sains Malaysia, Penang, Research Report Series No. 16, 1988.