

HEROIN ABUSE IN SINGAPORE — A PROFILE AND CHARACTERISTICS STUDY

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SYNOPSIS

300 heroin abusers selected randomly from a population of 2038 cases arrested during the first 3 months of Operation Ferret were studied and analysed for ages, sex, ethnic group distributions, other social characteristics and the patterns of drug abuse. This paper presents and discusses the results of the analysis.

INTRODUCTION

Heroin abuse is undoubtedly the most serious current drug problem in Singapore. In 1972 only 4 persons were arrested for heroin abuse. In 1974 there were 110. In 1975 2263 suspects were arrested. In 1976 an average of 475 per month were arrested. This growth rate obviously needed to be checked, and Operation Ferret was launched on 1st April 1977 as a massive offence to contain the growing drug problem. Suspected heroin abusers were rounded up all over the Republic and those found to have positive urine tests were detained in drug rehabilitation centres for periods up to six months. The present survey was based on a sample of the 2038 heroin abusers arrested during the first 3 months of Operation Ferret from 1st April to 30th June, 1977.

MATERIALS AND METHODS

A survey questionnaire with set coded answers was formulated. 300 cases were chosen randomly using Fisher and Yates Table of Random Numbers. Every person was interviewed individually and personally by one of the authors. To ensure uniformity, all were interviewed about 1 month prior to their release with the exception of 8 cases who were discharged early. They were subsequently recalled for the interview.

All cases were assured of strictest confidentiality. It was specifically pointed out that unfavourable answers would not affect their dates of release or subsequent supervision.

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Four of the 300 sampled who denied taking heroin (although their urine was positive for heroin) were left out of the analysis, leaving us with 296 cases.

RESULTS

1. Age, Sex and Ethnic Groups

Table 1 shows the distribution of cases according to age and sex. The controls were based on mid-1976 Singapore population estimates. Since our sample consists of 284 or 96.0% males and age range 13 to 43 years, only male controls ranging from 10 to 44 years were chosen for comparison. The 12 females were too small in number for any useful comparison. The mean age in years of the sample was 21.8 ± 4.8 (I.S.D.). The age group with the greatest number (111 cases) was 20-24 years followed by the age group 15-19 years with 103 cases. Together these two age groups accounted for almost three quarters of cases. Relating to the general population of Singapore the 20-24 age group also had the highest proportion of abusers.

Table 2 shows the ethnic group distribution of all the cases. Significantly more Malays were found than would be expected from the Singapore population control figures. This excess was significantly found in all age groups from 15 to 39 years.

TABLE 1: Distribution of cases according to Age and Sex using the mid-1976 Singapore population estimate (age 10 to 44 years) as control.

1) AGE	SAMPLE (MALES)		CONTROL (MALES)
	N	%	%
10 —	1	0.35	19.5
15 —	103	36.3	20.6
20 —	111	39.1	17.0
25 —	51	18.0	15.3
30 —	10	3.5	9.0
35 —	7	2.5	9.6
40 —	1	0.35	8.1
TOTAL	284	100.0	100.0
2) SEX	SAMPLE		CONTROL
MALE: FEMALE RATIO	23.7:1		1.04:1

(P < 0.001 for Age and Sex)

TABLE 2: Distribution of cases according to Ethnic Groups, using the mid-1976 Singapore population estimated as control. All figures are in percentages.

ETHNIC GROUPS	SAMPLE	CONTROL
Chinese	50.3	76.4
*Malays	42.6	15.5
Indians (including Pakistani and Ceylonese)	5.3	6.5
Others*	1.8	1.6
TOTAL	100.0	100.0

(P < 0.001) * Malays include Indonesians.

2. Educational Status

50.7% of cases received only primary education, 41.2% secondary education, 5.1% vocational training, while 2.0% had not received any form of education. Only 2 cases reached pre-university level and one received university education. Slightly more than half were from the English stream.

3. Occupation

134 or 45.3% of the abusers worked as unskilled labourers and 91 (30.7%) as semi-skilled or skilled technicians in various trades. 31 (10.5%) were unemployed. Only 11 (3.7%) worked in the entertainment business (nightclubs, bands, escort services). None was in the profession. There were only two (0.8%) students in the sample.

4. Recreational Activities

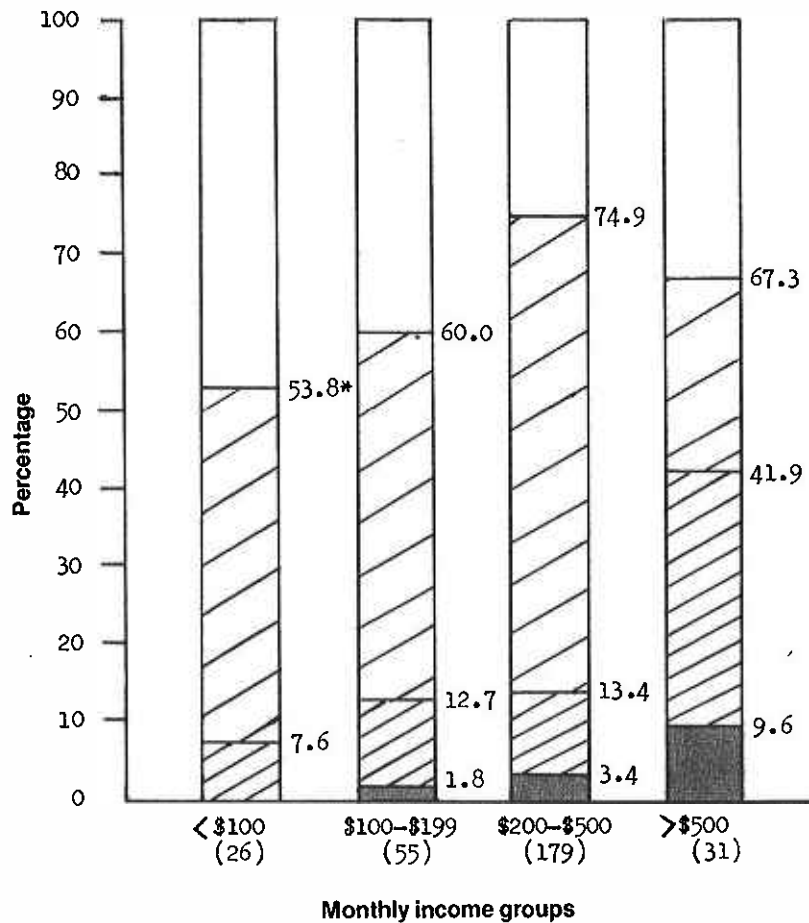
Contrary to popular belief, we found most (82.8%) of the abusers had recreational activities of some kind (sports or outdoor games, music appreciation, indoor games, reading). Only 17.2% had no hobbies of any kind.

5. Income/Expenditure on Heroin Per Month

Five cases did not reveal their income per month while the distribution by income of the other 291 cases were shown in Figure 1. The proportion of cases in each income group spending different specified amounts on heroin were also shown. It can be seen that as we move from the lower to the higher income group there is a corresponding increase in the proportions spending between \$300 to \$500, and similarly those spending more than \$500 per month. For those spending less than \$300, the trend was not definite.

6. History of Previous Offences

Previous offences were subdivided into 2 groups: (a) Criminal offences (b) Drug offences. Two cases were unwilling to reveal this information. 176 (59.5%) had no previous offences while 118 (39.9%) had. Of the 118 offenders, 70 committed offences related to drug taking and 48 committed criminal offences, the commonest being theft, house breaking, robbery and gambling. Age and duration of heroin abuse were two variables found to be very significantly associated with history of previous offences. X² and trend X² analysis showed that the higher the age and the



() refers to number of cases in each income group.

*: Cumulative

MONTHLY EXPENDITURE

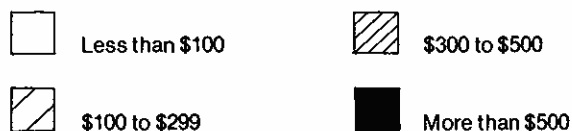


Fig. 1 Proportions of cases with different monthly expenditure on heroin in each income group.

longer the duration of heroin abuse the higher is the rate of previous offences. (Age: $X^2 = 11.68, P < 0.02$, Duration of heroin abuse: $X^2 = 17.09, P < 0.01$, for both variables trend X^2 tests give non-significant departures from linear trends).

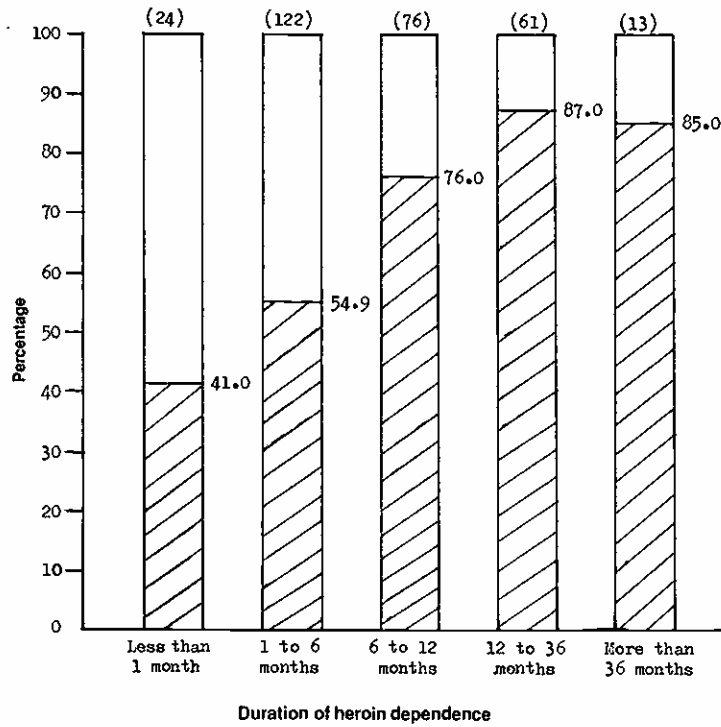
7. Characteristics of Heroin Dependence

Duration of abuse: 112 (41.2%) abuse heroin for 1 to 6 months, 76 (25.7%) 6 to 12 months, 61 (20.6%) 12 to 36 months, while 13 (4.4%) took heroin for more than 36 months. Only 24 (8.1%) abused heroin for less than a month.

Source: 203 (68.6%) obtained their heroin from

pedlars while 90 (30.4%) from their friends. These 2 sources accounted for 99.0% of cases. None obtained their heroin from doctors or pharmacists. 3 cases (1%) were unwilling to reveal their supply source. A very significant excess of Chinese (77.9%) obtained heroin from pedlars whereas Malays formed the largest group who obtained heroin from friends. ($X^2 = 18.1, P < 0.001$).

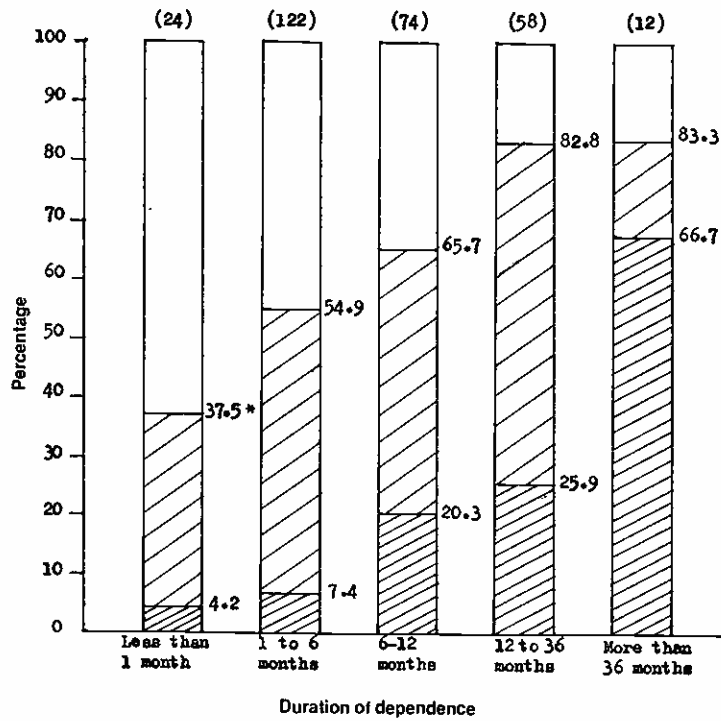
Drug first used: None of the cases abused amphetamines, cocaine or LSD from the start. Table 3 shows the drugs first used among the various ethnic groups. Significantly a higher proportion of Chinese (61.1%) abused heroin from the start, whereas among the Malays the corresponding proportion was 37.3%.



() refers to number of cases in each duration interval.

□ Non daily abusers ▨ Daily abusers

Fig. 2 Proportions of Daily heroin abusers according to duration of dependence.



() refers to number of cases in each duration interval.

*Cumulative percentage figures

□ No attempts ▨ One or two attempts ▩ More than two attempts

Fig. 3 Proportions of heroin abusers making previous voluntary attempts at withdrawals according to duration of dependence.

TABLE 3: Drugs first used among the different ethnic groups

Ethnic Group	Chinese		Malay		Indians		Others		Total
	N	%	N	%	N	%	N	%	
Ganja	41	27.5	76	60.3	8	53.3	2	33.3	127
MX Pills	12	8.1	3	2.4	0	0	0	0	15
Opium	4	2.7	0	0	0	0	0	0	4
Morphine	1	0.6	0	0	0	0	0	0	1
Heroin	91	61.1	47	37.3	7	46.7	4	66.7	149
TOTAL	149	100.0	126	100.0	15	100.0	6	100.0	296

(P < 0.01)

The latter however abused ganja initially in a significantly much higher proportion (60.3%) than the Chinese (27.5%). ($X^2 = 18.1$, $P < 0.001$).

Use of other drugs besides heroin by heroin abusers

Table 4 tabulates the breakdown in the use of other drugs besides heroin (and heroin only) in our sample and compares this with similar breakdowns in 2 other studies in U.K. These latter studies are probably not representative of today's addicts since there has been marked variation in the types of drugs used over the years.

Nevertheless comparison shows our heroin abusers to keep away from cocaine, amphetamines and LSD, and comparatively very much less use of cannabis, morphine/opiates or barbiturates (MX Pills included). Our sample however shows a much higher proportion who were "pure" heroin abusers i.e. not using any other drugs besides heroin.

Method of Heroin Taking

The majority of abusers (65.5%) consumed heroin in spiked cigarettes. Sniffing or "chasing the dragon" were used by 27.4%. 5.7% took heroin orally and only 1.4% injected heroin (intravenous, intramuscular or subcutaneous) into their system. This finding is independent of age, ethnic group or duration of heroin abuse and contrasts with the situation in Britain where intravenous administration from the start is most common and only a small proportion sniff or smoke the drug.

TABLE 4: Use of drugs other than heroin by heroin abusers

DRUGS	BEWLEY et al (1968)	WILLIS (1969 b)	PRESENT STUDY
Cannabis	83	98	47*
Cocaine	67	81	0
Amphetamine	60	93	0
L.S.D.	15	38	1
Barbiturates	40	0	25
Morphine/ Opiates	38	41	13
Heroin Only	3	—	48

(All figures in percentages)

*Rounded to nearest integer for comparison.

Frequency: 199 (67.2%) took heroin daily, 44 (14.9%) occasionally, 17 (5.7%) on weekends only and the remaining 36 (12.2%) took heroin regularly without any fixed pattern. The proportion of daily abusers increases with the increase in the duration of abuse. This is shown diagrammatically in Figure 2. The association is very significant ($X^2 = 61$, $P < 0.001$) and trend X^2 does not reveal a significant departure from linear trend. Willis (1969 b) noted similarly that some months usually elapsed before heroin was taken daily.

Reasons for taking heroin: 69.6% of cases gave "curiosity" as the main reason for taking heroin. 14.9% took because of peer group pressure, 8.4% due to psychological stress, 3.4% hoped for relief of medical symptoms, 0.7% used it as aphrodisiac and 3.0% was unable to state reasons for heroin abuse. Willis (1969 b) also found curiosity to be the most common reason for taking heroin in the 58 addicts he studied.

Previous voluntary attempts to withdraw and reasons

100 cases (33.8%) made no previous voluntary attempts to withdraw, while 6 cases (2.0%) withdrew few times under doctors' orders. The remaining 190 cases (64.2%) made at least one attempt with withdrawal on their own prior to present arrest. Figure 3 illustrates the significant trend relationship between voluntary attempts at withdrawal and duration of drug dependence.

The reasons given for voluntary withdrawals were:-

- i) Costly - 36.0% cases)
- ii) Family pressure - 28.0%)
- iii) Health reasons - 16.9%) Total 100%
- iv) Fear of arrest - 15.9%)
- v) Work deterioration - 3.2%)

Fear of arrest was among the least important reasons for withdrawal in our sample of heroin abusers.

Withdrawal Symptoms

These were categorised into 4 groups: (i) None (ii) mild (yawning, tearing, running nose, sweating, anorexia) (iii) moderate (muscle twitches, gooseflesh, insomnia, body aches) (iv) severe (extreme restlessness, nausea, vomiting, diarrhoea). Classification was based on the abuser's own description of symptoms.

A significant trend (X^2 trend test) is again observed when these were tabulated against duration of dependence. The proportion of moderate to severe

symptoms increase directly with increasing duration of abuse. This is a well known relationship and this demonstration suggests to us that the abusers we sampled were giving us the accurate answers. Almost all the abusers who took heroin from 12 to 36 months had withdrawal symptoms whereas only one third of those taking less than a month had.

DISCUSSION

1. During the first six months of Operation Ferret, 5554 persons were arrested with positive urine samples (SANA Drug Abuse Prevention Seminar, December 1977). We sampled 300 randomly from those arrested during the first 3 months (2038 cases). Table 5 compares some of the basic demographic characteristics between the 6 months total abusers population and our sample. (Age, sex, ethnic group distribution). The findings are very similar. Hence the various findings we had discussed probably also apply to the large population of heroin abusers.

TABLE 5: Comparison of basic demographic characteristics between all heroin abusers arrested during first 6 months of Operation Ferret and our survey sample taken from the first 3 months of the Operation.

CHARACTERISTICS	ALL ABUSERS	SAMPLE
1. AGE	91.0% below 30 years	93.9% below 30 years Mean: 21.8 S.D.: 4.8
2. LARGEST AGE GROUP	20 to 24 years	20 to 24 years
3. ETHNIC GROUPS		
CHINESE	48.7%	50.3%
Malay	40.8%	42.6%
Indians	8.9%	5.3%
Others	1.6%	1.8%
4. SEX		
MALES	95.6%	96.0%
FEMALES	4.4%	4.0%

(P > 0.05 for all characteristics)

2. The Malays abused heroin in a significantly much higher proportion than expected in all age groups. They formed the largest group among those who obtained heroin from friends. Compared with the Chinese, significantly more of them abused other drugs prior to heroin. This may be related to the finding that more of the Malays are in the lower income group (< \$200 per month) than the Chinese, Indians or Others.

3. Unlike most oversea studies, our sample study does not reveal any significant association between

heroin abuse and high unemployment rate or lack of hobbies. In fact only 10% of our sample were unemployed while 17% had no hobbies of any kind.

4. None or a negligible proportion of our heroin abusers took cocaine, amphetamines or LSD. This in contrast to situations in U.K. and U.S.A. where such drugs are frequently abused besides heroin. Availability is probably an important reason as evident by the fact that 99% of our sample obtained their heroin from pedlars (68.6) or friends (30.4). As "curiosity" and "peer group pressure" are the main reasons for initial demand for heroin (later on "addiction") an ideal supply and demand situation hence exists. The findings tend to support de Alarcon's (1973) view that the availability of drugs, together with presence of socialising drug users are among the necessary conditions for an outbreak of drugs misuse in a community.

5. Duration of drug abuse is an important variable as it is significantly related to increasing crime rate, more severe withdrawal symptoms and increasing risk of becoming a daily abuser. Hence those who abuse heroin for longer duration have significantly higher frequencies of voluntary attempts at withdrawal. Early control of the problem is therefore important. Our findings also suggest that voluntary attempts at withdrawals are generally unsuccessful. Compulsory detention and treatment appear to be a more effective approach although further definitive evaluation of Operation Ferret is necessary. This is especially so since "fear of arrest" is the least important reason for abusers to give up their habits.

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