

✓ The Dimensions of Drug *abuse - G.T. Bat* Dependence in the United Kingdom*

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Any account of the epidemiology of drug dependence in the United Kingdom inclines to give emphasis to the narcotic problem. That this should be so is hardly surprising given the recency of this phenomenon, its rapid escalation, and its associated high morbidity and mortality. Even so it needs to be recognized that the "drug problem" in the United Kingdom involves multiple drug abuse and that the curtailment of a particular epidemic is likely to be attended by the increased abuse of another drug. Accordingly this review will concern itself with drugs in addition to narcotics, though pre-eminence will be given to the abuse of heroin.

NARCOTIC ABUSE

The history of recent changes in the pattern of narcotic abuse in the United Kingdom has been documented in a number of sources. Bewley (1968) has pointed out that in the past ten years there has been a marked change in the incidence and the characteristics of those known to be dependent. Before 1950 the number known to be abusing narcotic drugs was relatively stable, varying between 400 and 600. Those involved tended to be

*Based on a paper discussed by the Special Research Group concerned with Epidemiology, at the International Institute on the Prevention and Treatment of Drug Dependence, Lausanne, June 8-11, 1970.

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Table 1
Number of Addicts Known to the Home Office—
Sex, Origin & Drugs Used 1935-1968^a

Year	No. of known Addicts	Sex		Origin			Drugs Used ^b					Professional Addicts
		M	F	Therapeutic ^c	Non-therapeutic	Unknown	Morphine ^d	Heroin ^e	Cocaine ^f	Pethidine ^g	Methadone ^h	
1935	approx. 700											approx. 120
1936	616	313	300									147
1937	620	300	320									140
1938	519	246	273									143
1939	534	269	265									131
1940	505	251	254									90
1941	503	252	251									91
1942	524	275	249									98
1943	541	280	261									94
1944	559	185	274									93
1945	367	144	223									80
1946	369	144	225									79
1947	383	164	219									87
1948	395	198	197									119
1949	326	164	162									100
1950	306	158	148									95
1951	301	153	148									77
1952	297	153	144									75
1953	290	149	141									71
1954	317	148	169									72
1955	335	159	176				179	57	6	64	21	80 ⁱ
1956	333	163	170				176	54	6	64	20	99
1957	359	174	185				178	66	16	92	31	88
1958	442	245	349	349	68	25	205	62	25	117	47	74
1959	454	196	258	344	98	12	204	68	30	116	60	68
1960	437	195	242	309	122	6	177	94	52	98	68	63
1961	470	223	247	293	159	18	168	132	84	105	59	61
1962	532	262	270	312	212	8	157	175	112	112	54	57
1963	635	339	296	355	270	10	172	237	171	128	59	56
1964	753	409	344	368	372	13	171	342	211	128	62	58
1965	927	558	369	344	580	3	160	521	311	102	72	45
1966	1349	886	463	351	982	16	157	899	441	123	156	54
1967	1729	1262	467	313	1385	31	158	1299	462	112	243	56
1968 ^j	2782	2161	621	306	2420	56	198	2240	564	120	486	43

^aThe sharp decrease in 1945 in number of addicts is due to the fact that until that year cases were included up to 10 years after the Home Office had received the last information. From 1958 only those notified as using in a specific year are included in that year's figures. It is thus almost certain that the annual figures after 1958 give a conservative picture of drug dependence in any one year. On the other hand it is impossible to say whether all those notified would be covered by a definition of addiction or dependence. Only from 1968 was it imperative for a medical opinion to be given before a person was notified as addicted. After H. B. Spear (1969).

^bAlone or in combination with other drugs.

^cThis information was not collected prior to 1958 (except for heroin addicts).

^dExact numbers not available but the proportion of addicts using morphine has varied from approximately 90% in 1935 to 60-67% in 1950-54.

^eExact numbers not available but the proportion of addicts using heroin has varied from 5% in 1935 to 19% in 1952.

^fExact numbers not available but less than 10% of the addicts used cocaine.

^gFrom 1948 to 1954 the proportion of addicts using pethidine varied between 12 and 19%.

^hExact numbers not available except in 1949 and 1951 when there were 2 and 3 respectively.

ⁱNurses included in "professional" for first time; hitherto they had been included in "other."

^jThe increase in the number of known addicts which appears in the 1968 figures is spurious. During 1968 treatment centers were set up and many who were previously unknown but nevertheless addicted, came forward and were incorporated into the 1968 total.

middle-aged and a disproportionate number were drawn from the medical and paramedical professions. In most cases addiction had a therapeutic origin and the drug involved was usually morphine.

Almost coincidental with the publication of the first report of the Inter-Departmental Committee on Drug Addiction (The Brain Committee) there originated a series of changes which have continued in the same direction until the present day. There appeared both an increase in the number of people known to be dependent on narcotic drugs and an increasing tendency for their addiction to have nontherapeutic origins. The persons concerned also tended to be younger and predominantly male. There was evidence that the drug preferred was heroin rather than morphine and indications were that other drugs were being increasingly abused. Whereas the misuse of illicitly obtained drugs was originally confined to London the problem also spread to other parts of the country (see Tables 1, 2, and 3).

It needs to be emphasized that the figures on which these observations are based have not, until recently, been comprehensive. Prior to the introduction of the Dangerous Drugs (Notification of Addicts) Regulations in 1968, it was not obligatory for doctors treating dependent patients to notify their dependence, and the figures published by the Home Office were largely derived from the routine examination of pharmacists' records. The annual statistics published by the Home Office until 1968 showed only those addicts known to have been taking drugs during the previous year; they excluded those who were not known to be currently taking drugs—for example, those

Table 2
Ages of Addicts Known to the Home Office^a

Age ^b	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Under 20										
all drugs	—	1	2	3	17	40	145	329	395	764
heroin	—	1	2	3	17	40	134	317	381	709
20-34										
all drugs	50	62	94	132	184	257	347	558	906	1530
heroin	35	52	87	126	162	219	319	479	827	1390
35-49										
all drugs	92	91	95	107	128	138	134	162	142	146
heroin	7	14	19	24	38	61	52	83	66	78
50 and over										
all drugs	278	267	272	274	298	311	291	286	279	260
heroin	26	27	24	22	20	22	16	20	24	20
Age unknown	34	16	7	16	8	7	10	14	7	82

^aAfter H. B. Spear (1969).

^bPrecise details of age groupings were not included in Annual Reports until 1959.

Table 3
*Number and Origin of All Heroin Addicts
 and of New Heroin Addicts 1945-1968^a*

Year	Total No. of heroin addicts	Thera- peutic	Non- thera- peutic	Un- known	No. of new heroin addicts in year	Thera- peutic	Non- Thera- peutic	Un- known
1945					1	1	-	-
1946					1	-	1	-
1947					3	-	3	-
1948					4	1	3	-
1949		Not available			3	1	2	-
1950					3	1	1	1
1951					1	-	1	-
1952					8	3	5	-
1953					4	-	4	-
1954	57	20	36	-	16	2	14	-
1955	54	18	36	-	10	1	9	-
1956	53	17	36	-	10	1	9	-
1957	66	21	45	-	7	2	5	-
1958	62	19	43	-	11	3	8	-
1959	68	21	47	-	11	2	9	-
1960	94	22	72	-	24	1	23	-
1961	132	20	112	-	56	2	54	-
1962	175	18	157	-	72	-	72	-
1963	237	18	222	-	90	-	90	-
1964	342	13	329	-	162	2	160	-
1965	521	12	509	-	259	1	258	-
1966	899	13	885	1	522	3	518	1
1967	1299	9	1290	-	745	-	745	-
1968	2240	8	2232	-	1306	2	1304	-

^aAfter H. B. Spear (1969).

addicts in prison or abroad or those who obtained their drugs entirely from illicit sources. While the total number of opiate addicts in the United Kingdom is still by international standards small—estimated by Bewley (1968) to be of the order of 4.8 per 100,000—the rate at which new cases have been notified leaves no cause for complacency. Thirty-six times as many addicts were known in 1968 as were known in 1958, a difference which partly reflects the introduction of the notification of addicts regulations in April 1968. One hundred and nineteen times as many new addicts were notified in 1968 as were first known in 1958.

Spear (1969) has recently attempted to analyze the events of the 1950's which heralded the present epidemic. He observes that the first significant change in the situation occurred after the Second World War, when there was an increase in the number of seizures of cannabis made by H.M. Customs and

Excise. The first post-war annual report (1946) acknowledged that there was a small traffic in cannabis, largely confined to two Black groups, with Black seamen being the principal importers. A further "considerable increase" was noted in the following year, and the same source was implicated. By 1950 it was clear that the traffic in cannabis was of greater importance than the traffic in opium, and the total number of persons prosecuted for offenses involving cannabis has risen ever since (Table 4).

While the use of this drug continued to be linked mostly with the non-white population, in 1950 it became apparent that cannabis was also being used by the indigenous population. A major case of drug trafficking occurred soon after when approximately 1200 grains of morphine, mostly in tablet form, and 14 ounces of cocaine were stolen from a firm of wholesale chemists. While the drugs had been stolen by one of the firm's employees, it transpired that the instigator was a person having contact with drug addicts in the West End of London. However, the persons to whom he supplied the drugs were already known addicts and there was no evidence that others were recruited to the habit by his activities. A further major case of trafficking occurred in 1951 when the dispensary of a hospital was broken into and considerable quantities of morphine, heroin and cocaine were stolen. The person involved was a former employee of the hospital. Although the full extent of his activities cannot be charted, it appears that a majority of those supplied drugs by him had no previous experience of heroin addiction. All of those of whom it could be ascertained that they had received their initial supplies from this source subsequently came to the notice of the Home Office as heroin addicts. While Spear does not attempt to explain the change in the pattern of drug abuse in the United Kingdom, he does observe that the appearance of a pusher in the West End of London and the scarcity of cannabis following increased police activity appear to have played a significant part.

Sex

In 1958 the ratio of male to female addicts (including narcotic addicts) known to the Home Office was 1:1.2. Prior to 1958 the ratio had been, with minor and inconsistent deviations, 1:1. In 1968 the ratio was 3.5:1, reflecting the consistent trend over the previous five years for males to increasingly predominate (Table 1).

As the average age of known addicts has declined and the number of cases of nontherapeutic addiction increased, the ratio of males to females has increased until it approximates that reported for American juvenile addicts. A

Table 4
Drug Offenses^{a,b}

Year	Opium	Cannabis	Manufactured Drugs
1921	184	Not controlled in the United Kingdom	67
1922	94		110
1923	167		128
1924	48		50
1925	35		33
1926	50		45
1927	27		33
1928	41		21
1929	39		31
1930	16	3	48
1931	26	1	40
1932	37	3	43
1933	17	6	32
1934	39	14	33
1935	13	15	33
1936	17	8	35
1937	9	3	27
1938	6	18	35
1939	13	1	36
1940	14	3	37
1941	201	-	25
1942	199	-	27
1943	147	2	40
1944	256	6	32
1945	206	4	20
1946	65	11	27
1947	76	46	65
1948	78	51	48
1949	52	60	56
1950	41	86	42
1951	64	132	47
1952	62	98	48
1953	47	88	44
1954	28	144	47
1955	17	115	37
1956	12	103	37
1957	9	51	30
1958	8	99	41
1959	18	185	26
1960	15	235	28
1961	15	288	61
1962	16	588	71
1963	20	663	63
1964	14	544	101
1965	13	626	128
1966	36	1119	242
1967	58	2393	573
1968	73	3071	1099

^a From 1921-1953 inclusive figures relate to prosecutions; from 1954 figures relate to convictions.

^b After H. B. Spear (1969).

number of other studies (Hawks et al., 1969; O'Connell, 1970; Murphy et al., 1969) have confirmed this tendency in adolescent non-narcotic users.

Age

Whereas in 1959 there were no heroin addicts under the age of 20, in 1968 they constituted 32% of the total. A similar increase occurred in the 20-24 age group while those over 35 have stayed numerically the same (Table 2).

Origin

The number of heroin addicts whose dependence had a therapeutic origin has stayed remarkably stable over the entire period for which information is available (1954-1969), while those whose addiction was nontherapeutic have shown a marked increase (Table 3). Of the 1306 new addicts notified in 1968, all but 2 were of nontherapeutic origin. This tendency has paralleled the decreasing significance of the "professional" addict, the medical and paramedical addict. Whereas professional addicts constituted 31% of the total known addicts in 1950 and 14% in 1960, they represented less than 2% of the total in 1968.

Drug of Choice*

Changes in the pattern of drugs used have largely followed changes in the origin and composition of the addict population. Whereas in 1958 only 14% (62) of known addicts used heroin compared to 46% (205) who used morphine and 26% (117) who used pethidine, in 1968 the percentages were 80% (2240) heroin, 7% (198) morphine and 4% (120) pethidine. This marked change reflects the younger, nontherapeutic addict's preference for heroin. Even in 1965 only 39% (52) of the 35-49 age group were dependent on heroin; for those aged 50+ the percentage was 5% (16).

Of current concern is the increasing tendency for methadone to be the principal drug of addiction. In 1958 only 11% (47) were dependent on methadone; in 1968 the comparable percentage was 17% (486). Preliminary figures for 1969 indicate a further percentage increase.

*The percentages given in this section need to be interpreted with caution as any drug tends to be used in combination with others and the total number shown as using particular drugs as a consequence exceeds the total known addicts. However, the same basis of comparison (i.e., the total number of known addicts) has been used in all cases.

Nationality

The great majority of heroin addicts in the United Kingdom have been of British nationality. Of all new cases of heroin addiction notified over the years 1955-1964, 77% (348) were British, 20% (88) Canadian, Australian, American or New Zealander and 3% (14) were of other nationalities. Canadians have always constituted the single largest non-British group. Ninety-one are known to have arrived in the United Kingdom between 1959 and 1969. The peculiar characteristics of the Canadian group, their status in the United Kingdom, and the history of their migration has recently been analyzed by Zacune (1970).

A study of those 519 persons known to the Home Office as dependent on narcotics in 1965 (Gobius and Hawks, 1970) showed that 83% (433) were of British nationality, while in a representative sample of 111 patients prescribed heroin in London treatment centers in 1969 the percentage was 86% (95) (Stimson and Ogborne, 1970). A number of studies of largely un-notified heroin users (Kosviner et al., 1968; de Alarcon and Rathod, 1968; Zacune et al., 1970) have confirmed the view that the heroin problem in the United Kingdom largely concerns the indigenous population and that minority ethnic groups are not, as yet, disproportionately represented as is the case in the United States of America.

Geographical Distribution

While the misuse of illicitly obtained narcotics has spread beyond London, it remains the case that London is the main source of supply and the majority of known addicts are accommodated within its boundaries. In 1969, 80% (904) of known addicts were registered with London treatment centers.

A number of other urban centers have received publicity (Jones, 1968; de Alarcon, 1969; Owens, 1967) as having "drug problems," but they tend to be readily accessible to London; to be supplied by London contacts; and when local restrictive measures are taken, "lose" some of their addicts to London (Zacune, 1969b).

This is not to suggest, of course, that the vast majority of United Kingdom addicts are born in London or that where local centers are established they do not attract addicts from other areas, but only that addicts tend to congregate in London where illicit supplies are more plentiful and where the society of other drug users guarantees the continued fulfillment of their needs and the support which the "junkie" subculture supplies.

More accurate information as to place of birth and mobility of heroin

addicts will be forthcoming when the Department of Health and Social Security publish their detailed statistics on all those notified after April 1968.

Poverty

There have been very few systematic attempts to inquire into the actual material circumstances of those addicted, though, as has been previously stated, minority groups are not disproportionately represented. Most investigators have contented themselves with recording the addicts' best and present employment status. But given the youthfulness of the addict population, both provide unreliable indices. Consideration of their fathers' socio-economic status shows that this approximates the norm. Some studies (Kosviner et al., 1968) actually show a better than average socio-economic background. Comparison of fathers' and addicts' occupational status tends to show a disparity in favor of the father. This can hardly be unexpected given the age differential and present status of the addict.

It is to be expected that roughly half of any sample studied will be living with their parents and, thus, to some extent supported by them, and that the remainder are at least eligible to receive welfare benefits (though fewer than those eligible actually take advantage of these benefits). There is little

Table 5
Socio-Economic Grouping (Registrar General) of Users, Users' Parents and Economically Active Males (Greater London Area Census 1966)^a

Classification	Socio-economic Group	Users' Occupation		Users' Parents' Occupation		Population Statistics
		N	%	N	%	%
Professional workers	3, 4	2	1.6	10	7.8	5.6
Employers & managers	1, 2, 13	10	7.8	23	18.0	12.0
Foremen, skilled manual & own account workers (other than professional)	8, 9, 12, 14	12	9.4	36	28.1	35.0
Non-manual workers	5, 6	43	33.6	20	15.6	23.5
Personal service workers, semi-skilled manual workers, and agricultural workers	7, 10, 15	33	25.8	10	7.8	14.5
Unskilled manual workers	11	23	18.0	15	11.7	8.0
Members of armed forces & persons with inadequately described occupation	16, 17	1	0.8	3	2.4	1.3
Not known	-	4	3.1	11	8.6	-

^aAfter Stimson and Ogborne (1970).

evidence of heroin addiction in the United Kingdom being nurtured by material poverty on the one hand or producing it on the other. On the contrary, those notified in the 1960's were often construed as "middle class dropouts" whose addiction, far from being explicable in terms of some material disadvantage, appears to have been motivated by the deliberate rejection of middle class norms and opportunities. While there is little factual information either to support or refute this view, there is some recent evidence that this "exclusiveness" no longer characterizes the addict population.

The older and typically more stable addicts characteristic of the 1950's tended to continue in employment. Of the 25 Canadians interviewed by Zacune (1970), 68% (17) were currently employed and only 28% (7) had any history of prolonged unemployment since arriving in England.

Delinquency and Criminality

A basic tenet of the British "solution" has been the assumption that by providing addicts with a licit supply of narcotics one avoids the growth of an illegal market such as has occurred in the United States and Canada. It is often inferred from this that as a consequence, United Kingdom addicts have not engaged in delinquent activities before they became dependent nor do they embark on a criminal career once they are in receipt of a regular prescription. The evidence, however, does not wholly accord with this view. While the incidence of pre-drug delinquency in the various groups studied tends to reflect the mode of their selection and to show considerable variation from one group to another, approximately one-half of known addicts commit criminal offenses before they are registered. While it is extremely difficult to distinguish between drug-related and unrelated offenses after addiction has been notified, a significant proportion of registered addicts continue to commit criminal offenses which are not obviously related either to obtaining or being in possession of drugs (Zacune et al., 1969b; Stimson and Ogborne, 1970; Mitcheson et al., 1970; Willis, 1969; Kosviner et al., 1968; Hawks et al., 1969; James and D'Orban, 1970).

These statements represent generalizations and as such are open to exception. The majority of heroin addicts have used other drugs for periods of 1 to 4 years before they are notified and at least some of their pre-heroin delinquency may be precipitated by their pre-heroin drug use. Similarly, criminal offenses committed after a person has become registered, while not involving possession of illegal drugs, may nevertheless be directly related to the individual's drug-dependent status.

The varying estimates deriving from different studies, as well as reflecting methodological differences and ambiguities, suggest that in some cases narcotic dependence is an extension of previous delinquent behavior, whereas in others it occurs without there being evidence of previous criminality. However, even in those cases in which drug dependence is closely associated with pre-existing delinquency, delinquency in itself does not provide a sufficient explanation of drug dependence since the latter continues to be a minority manifestation.

Mortality (Including Suicide)

The mortality among United Kingdom addicts is extremely high, estimated to be 28 times in excess of the comparable age group in the general population (Bewley, Ben-Arie and James, 1968; James, 1967). Bewley has calculated the mean age of death among nontherapeutic addicts during the periods 1955-1964 and 1965-1966 and found them to be 30.3 and 24.8 years, respectively. They conclude that while the declining age of death reflects the decreasing age of those addicted, mortality tends to be higher among younger addicts. Of the 12 cases of "natural" death occurring in this sample almost all were indirectly due to the consequences of drug dependence; in the remaining 38 cases the relationship was unambiguous.

While the death rate among female addicts tends to be less than that among males it is, even so, five times in excess of the expected mortality rate.

Bewley has suggested that this extremely high mortality, over twice that of heroin addicts in New York, possibly reflects the higher doses taken by United Kingdom addicts and their use of other drugs in combination. James concludes from similar evidence that the practice of maintaining narcotic addicts on a permanent allowance of legally supplied drugs is attended by such substantially increased mortality risks that it is not a satisfactory substitute for an abstinence-oriented program.

In his study of 436 new nontherapeutic addicts who became known to the Home Office between 1955 and 1964, James (1967) found a suicide rate among the males 50 times in excess of that of the general population corrected for age. While it is extremely difficult to discern intention in cases of drug overdose, the circumstances in a sufficient number of cases suggest that suicide is a significant accompaniment of narcotic dependence.

The increasing tendency for narcotic addicts to inject barbiturates (Mitcheson et al., 1970; Stimson and Ogborne, 1970) can be expected to result in an even higher mortality risk.

Morbidity

Admission to hospital for reasons related to drug dependence (excluding withdrawal) is extremely common among United Kingdom heroin addicts. In their study of 100 consecutive male heroin addicts discharged from a London hospital, Bewley and Ben-Arie (1968) found that in the 2½ years over which patients were followed-up there were a further 155 admissions including readmissions to the same hospital. There were in addition 148 admissions to other hospitals including 95 to other mental hospitals. Zacune, Mitcheson and Malone (1970) followed up 37 heroin users over 12 months and found that 11 of them had been admitted to hospitals a total of 23 times. Apart from drug withdrawal the most frequent reasons for hospitalization are the treatment of abscesses, overdoses, hepatitis and septicaemia.

Hawks, Ogborne and Mitcheson (1970) in a study of 74 methylamphetamine injectors found that the incidence of complications requiring medical treatment was higher among those who had also used heroin and highest among those who were currently using heroin.

Liver function tests carried out on addicts show that 60-80% have evidence of hepatocellular damage (Bewley, Ben-Arie and Marks, 1968; Marks and Chapple, 1967). Where jaundice occurs it is most often attributable to sharing someone else's needle. Stimson and Ogborne (1970) found that only 11% (12) of their sample could be said to use sterile injection procedures.

It may be concluded that despite the provision in the English system for the legal prescription of unadulterated heroin and the opportunity to supply disposable syringes and teach sterile injection practices which frequent clinic attendance allows, complications resulting from dependence are numerous and the resultant load placed on hospitals onerous. Recent correspondence in the medical press suggests that the number of complications treated in the casualty departments of general hospitals is increasing.

Prognosis

The current epidemic of narcotic dependence in the United Kingdom is of too recent origin for its long-term prognosis to be ascertained and any assessment of its short term outcome is likely to reflect the relative lack of adequate treatment facilities as much as the course of the condition.

There are, however, some statistics available. Bewley, Ben-Arie and James (1968) in a study of 1272 heroin addicts who first became known to the Home Office between 1947 and 1966, found that 70% (890) were still taking

opiates in 1966 and, of those 293 not known to be taking opiates, 64% (189) were either in a hospital, prison or some similar institution. There had in addition been 89 deaths where the principal causes of death were sepsis, overdose and suicide.

In their study of the 519 narcotic addicts known to the Home Office in 1965, Gobius and Hawks (1970) found that 56% (292) were still known to be dependent in 1968. The distribution over the period 1965-1968 is given in Table 6.

Nor does the short-term prognosis seem more favorable. Twelve of the 23 admissions studied by Zacune et al. (1969b) were followed by relapse within a week of discharge, five within a month, three within two months, and three remained abstinent for at least three months and were abstinent at the time of the interview.

Perhaps the most detailed and long-term follow-up study has been carried out by Clark (1962) on a group of 65 patients admitted to a provincial hospital between 1949 and 1960. The disadvantage of this study from the point of view of its generality is the atypical nature of the sample—all patients were drawn from the medical and nursing professions. The duration of follow up varied from two to twelve years, though almost 60% were followed-up for five years or more. Of those addicted to drugs under the Dangerous Drugs Acts, only 14% remained drug free when discharged and only 18% were able to continue their profession. The largest group was comprised of those who

Table 6
*Prognosis of Narcotic Addicts Known to the
Home Office in 1965^{a,b}*

Known in 1965 to be dependent on narcotics	100% (n = 519)
Known in 1966 to be dependent on narcotics	77%
Known in 1967 to be dependent on narcotics	66%
Known in 1968 to be dependent on narcotics	56%
Dead in 1968	9%

^a While confirming the chronicity of the condition it needs to be emphasized that Gobius and Hawks' data is retrospective and dependent on the adequacy of the Home Office's system of documentation which until 1968 was not based on any compulsory notification of addicts.

^b After Gobius and Hawks (1970).

resorted to drugs for varying periods of time and in varying dosages since being discharged. Included in this group were a few patients who had been stabilized on regular doses of drugs and who appeared otherwise to manage their lives relatively satisfactorily providing that the drug was maintained.

AMPHETAMINE ABUSE

Whatever the limitations affecting the compilation and interpretation of statistics relating to narcotic abuse, those applying to evidence of amphetamine use and misuse are manifold by comparison.

Amphetamines can be obtained on prescription from any doctor, though methylamphetamine in liquid form can only be dispensed by hospital pharmacies. While these drugs are not tabulated separately, a Parliamentary Bill providing for this possibility and their restricted prescription is currently under consideration.

Changes in the incidence of misuse of amphetamines were first observed by Connell (1958) who described a number of patients whose use of amphetamines led to their experiencing psychotic episodes. Soon after there was evidence of an increase in the misuse of amphetamines taken in tablet form and obtained illegally (Linken, 1963; Connell, 1964, 1965a,b; Sharpley, 1964). The principal drug involved was an amphetamine/barbiturate mixture, Drinamyl, and misuse was confined to parts of the West End of London. While it is difficult to estimate the extent of illicit use of amphetamines, since the majority of people using them neither appear before the courts nor develop symptoms necessitating medical consultation, urine screening of selected populations has confirmed an increase in the misuse of amphetamines (Scott and Willecox, 1965; Crockett and Marks, 1969).

Studies of adolescent amphetamine users show that members of this group misuse a variety of amphetamine preparations and typically substitute one for the other when supplies dictate this. While at any one time a particular drug may be favored, evidence suggests that any attempt to control its supply will be attended by the increased use of other preparations.

Studies which have considered the chronology of drug use have consistently demonstrated that amphetamine and amphetamine/barbiturate mixtures are, with cannabis, the drugs most frequently taken first (Hawks et al., 1969; Mitcheson et al., 1970; Stimson and Ogborne, 1970; Kosviner et al., 1968).

The legitimate use of these drugs is also inadequately documented, though there is some evidence that the total number of prescriptions for stimulants issued under the National Health Service has decreased in the last

Table 7
*Number of Prescriptions
for Stimulants (in millions)^a*

	Year	
	1962	1968
Number	5.4	3.9
Percent of total prescriptions	2.7	1.5

^aWhile it is not possible to ascertain the total number of amphetamine tablets represented, the figures given indicate the vast majority of prescriptions issued (they exclude those issued privately).

six years (Table 7). An investigation recently carried out by the Government Social Survey into the drug use of a representative sample of the adult population will provide information on this point.

In the absence of any data derived from a representative base, a number of local studies have been published from which extrapolation is possible. A survey conducted in Newcastle (Kiloh and Brandon, 1962) showed that approximately 500 people in a population of 250,000 were psychologically dependent on amphetamines. The majority of these were middle-aged women who had been originally prescribed amphetamines as treatment for depression or as appetite suppressants. Extrapolating from this figure gives a rate of 200 per 100,000 of the population. A study carried out by Brandon and Smith (1962) showed that of patients receiving regular prescriptions of amphetamines or related drugs from general practitioners 21% were thought by their doctors to be habituated. Wilson and Beacon (1964) in a study of 58 patients attending 11 practices (their selection is not explained) found that 58% were Drinamyl-conditioned in that they said they could not do without Drinamyl. However, as only seven of the 22 patients who said they could do without Drinamyl actually ceased taking it, Wilson and Beacon's estimate of the number dependent is minimal. The fact that they do not specify how their patients were selected does, however, preclude generalization from their results.

In contrast to the younger amphetamine user described by Connell (1964, 1965a,b) the amphetamine-dependent person identified in these studies usually became dependent in the course of medical treatment and did not resort to illegal supplies. They did not usually know one another or form any identifiable subculture.

That psychotic episodes could occur in persons abusing amphetamines was first demonstrated in the United Kingdom by Connell (1958) and

Table 8
Number of Prescriptions for Barbiturates and
Nonbarbiturate Hypnotics (in millions)^a

	1962		1968	
	N	% of Total Prescriptions	N	% of Total Prescriptions
Barbiturates	15.8	8.0	15.3	3.7
Nonbarbiturate hypnotics	2.6	1.3	5.8	2.2

^a Does not include private prescriptions.

confirmed in a group of methylamphetamine injectors by Hawks et al. (1969):

BARBITURATE AND NONBARBITURATE HYPNOTIC ABUSE

The increasing use of barbiturates and their potential for misuse has for some time been a cause for concern. Their use by narcotic addicts is a more recent phenomenon (Mitcheson et al., 1970; de Alarcon, 1969b; Chapple, 1969).

Bewley (1968) summarized evidence from a number of sources and observed that in the past ten years there has been a marked increase in the number of overdoses with barbiturates. The suicide rate from barbiturate poisoning has more than doubled, added to which there has been a three-fold increase in the number of people treated in hospitals for poisoning (Kessen, 1965; Bewley, 1966; Glatt, 1962; Brooke and Glatt, 1964).

While the absolute number of prescriptions for barbiturates and nonbarbiturate hypnotics under the National Health Service has increased over the period 1962-1968, their number as a percentage of the total has decreased.

The number of prescriptions for tranquilizers increased over the same period from 6.6 to 16 million. As this figure includes the phenothiazines it is impossible to infer an increase, if any, in the number of prescriptions for the barbiturate-like minor tranquilizers.

It needs to be noted that these figures do not include private prescriptions and so represent a minimum estimate. Where a drug like the barbiturates has abuse potential it is probable that a not inconsiderable number of private prescriptions are filled and any estimate of the total number dependent on these drugs would need to take account of this unspecified segment of the market.

Two studies of barbiturate prescribing in general practice allow some

estimate of the extent of dependence on these drugs by persons receiving legitimate prescriptions. A study conducted by Adams et al. (1966) on a group practice of 10,000 patients in London showed that 407 (4%) were given prescriptions for barbiturates. More than half of these 407 patients had received these prescriptions for more than a year and though most of them continued to receive the drug without obvious addiction there was evidence of increasing dosage in 47 cases.

Johnson and Clift (1968) found 97 patients (1.3%) who were receiving repeat prescriptions for hypnotics (74 barbiturate, 23 nonbarbiturate). While only 2% of this group were described as severely dependent, only four patients were able to discontinue their prescriptions, suggesting that the remaining 91 were dependent on them to some extent. In both of these studies patients receiving barbiturates were more likely to be female, over 40, and married.

It is extremely difficult to estimate the extent of barbiturate dependence in the general population on the basis of the several G.P. surveys carried out. Bewley (1968) has suggested that it might be of the order of 150-250 per 100,000 of the population.

Informed reports from social workers, police, and hospitals, as well as drug users themselves, suggest that the use of barbiturate-type drugs has recently increased among young persons to the extent where it rivals the amphetamines. In a study of 65 heroin users Mitcheson et al. (1970) found that 62 had taken barbiturates; of these 52 had injected the drug intravenously. Forty-one admitted using methaqualone (Mandrax) illicitly. Forty had received prescriptions for barbiturates from general practitioners, 29 under the National Health Service and 18 privately. Where users were buying barbiturates illicitly it appeared that the seller was usually in receipt of a prescription for the sedatives which he later resold.

CANNABIS AND LSD

Estimates of the number of cannabis- and LSD-users in the United Kingdom derive almost entirely from the number of offenses for possession of these drugs, a basis which involves the dubious assumption that convictions reflect use (Table 4).

Bewley (1966) has observed that until 1945 there was very little use of cannabis in the United Kingdom. Between 1945 and 1960 there was a slow increase and between 1960 and 1965 a marked increase in the use of this drug. If one assumes, as Bewley does, that for every conviction for possessing cannabis there are possibly ten or twenty people who are not convicted, the

number of regular cannabis users in the United Kingdom would approximate 30 per 100,000 of the population; this figure would be doubled if occasional users were included.

A number of studies, mainly unpublished, have described the student cannabis taker, estimated in a variety of sources (Andry and Sington, 1965; Linken, 1968; Binnie and Murdock, 1969) as constituting about 10% of the tertiary student population.

Binnie and Murdock (1969) and Webb et al. (1969) both found that students who had smoked cannabis rarely used other drugs with the exception of the amphetamines. The majority of users had smoked cannabis on only a few occasions and were not differentiated from nonsmokers. They did tend, however, to be more radical and permissive in their political and social attitudes and to be more often enrolled in nonscience subjects. Webb et al. (1969) found that those who had smoked cannabis had consulted a psychiatrist significantly more often and saw their general practitioners more often in the previous year. They were also more likely to report that they were regarded as trouble makers at school and had in fact committed more offenses of various kinds. They also tended to be earlier and heavier users of both tobacco and alcohol and reported being drunk more often. There was no relationship between multiple drug use and continued cannabis use. Of those who had given up smoking cannabis, the majority did so because they lost interest or moved away from the source. Except in a minority of cases, there was little evidence of cannabis assuming a significant role in their lives.

There is very little objective data available on the vexing question as to whether previous cannabis use predisposes toward subsequent drug dependence. While it is frequently attested that the majority of heroin users in the United Kingdom have smoked cannabis, and for approximately half it was the first drug used, estimates as to the number of cannabis users who become heroin addicts vary considerably and in part reflect the particular group considered.

Estimates as to the number of people in the United Kingdom who have used LSD or other hallucinogens are based entirely on a few well publicized but almost certainly atypical cases and the investigation of other drug users. Stimson and Ogborne (1970) found that 74% of their sample of heroin users had used hallucinogens at some time, of whom half had used hallucinogens at least weekly. Only 9% of the total had used hallucinogens at all in the last month, however, confirming an impression that among heroin addicts the use of LSD tends to be sporadic and self-limiting.

Unlike the situation in the United States, the use of cannabis and LSD do not appear to be closely associated in the student population. Binnie and

Murdock (1969) found that only 9% of their tertiary students who smoked cannabis had used LSD. The comparable percentage from Webb et al. (1969) was 4%. Nor is there a significant tendency in the United Kingdom for LSD and other hallucinogens to be used therapeutically as abreactive agents.

Bewley (1967) has reported a number of cases of short-lived psychoses in people taking LSD and has estimated from wholly informal sources (Bewley, 1968) that perhaps 1.5 per 100,000 of the population have experimented with LSD.

SOME TENTATIVE GENERALIZATIONS

Any attempt to generalize about the dimensions of drug dependence in the United Kingdom is largely to be attended by numerous exceptions both as a result of the inadequate information available and the rapidly fluctuating nature of the phenomenon. Perhaps the only valid generalization which can be offered is that the problem has assumed a bewildering variety of forms over a comparatively short period of time. Particular manifestations, for example, the epidemics of methylamphetamine and methaqualone abuse, have largely disappeared before they could be investigated and certainly before they could be understood. Individual preparations have assumed a brief prominence to be followed by others, either as a result of deliberate legislative action or, in some cases, the dictates of fashion. Drugs of quite opposite pharmacological action have been used interchangeably, and if not interchangeably then in combinations which defy pharmacological explanation.

Treatment

A constant feature of all such trends, however, has been a tendency for addicts to abuse a variety of drugs. Under these circumstances, measures—whether therapeutic or legislative—designed to cope with the abuse of a particular drug are likely to prove ineffectual in the absence of attempts to deal with the total situation. There is some recent evidence to suggest that the success with which the total amount of heroin prescribed has been reduced has been attended by an increase both in the amount of methadone prescribed by general practitioners and the amount of barbiturates misused.

The British system of treatment centers was predicated on the assumption that by supplying heroin legally to addicts, a black market would prove uneconomical. It was also assumed that by restricting the right to prescribe heroin to certain designated doctors the over-prescribing which characterized

certain general practitioners would be avoided. In making this assumption it was supposed that the doctors working in treatment centers would be both more experienced and better able to assess the true needs of the addict. On the whole these two assumptions appear to have been fulfilled. Apart from some consternation following the circulation of "Chinese heroin" (powdered heroin) which subsequently proved to be largely caffeine (personal communication: Home Office), there appears to have been little evidence of a black market in heroin developing. Similarly, while there was initially considerable variation in the average amount of heroin prescribed by different treatment centers, in part reflecting the different character of their patient loads, the total amount of heroin prescribed by doctors working in the treatment centers has declined and variation between clinics has reduced. In the face of this decline the price of heroin on the illegal market has risen, suggesting that it is not being supplied from other sources. These developments have not been without other, less favorable consequences, as the increased use of methadone and barbiturates by heroin addicts demonstrates.

Illicit Sources

The illicit market in heroin is probably supplied by over-prescription occurring in some cases (almost inevitably, if under-prescription with its attendant evils is to be avoided). The amphetamine market is almost wholly supplied by thefts from wholesale and retail chemists, though over-prescribing is also a factor. While cannabis tincture is prescribed by a limited number of doctors the illegal market in cannabis is largely supplied from illegal imports. The results of Mitcheson et al. (1970) suggest that barbiturates are mainly obtained from legal prescriptions—if not to the addict himself at least to the primary source, though there is evidence that thefts are also increasing. These authors conclude on the basis of the evidence obtained by them that "it is no longer sufficient for the doctor to review only those traditional middle-aged patients who come with repeated requests for sleeping tablets. Any request for sleeping tablets should be carefully considered especially when the patient is under 30 or is not personally known to the practitioner."

Initiation

Consistent with the view that most illegally-obtained heroin is supplied by the National Health Service is the finding that potential addicts are initially supplied heroin by their associates and only rarely by someone unfamiliar to them. By establishing the approximate date at which heroin users had their

initial injection of heroin and the identity of the person who had given them this injection, de Alarcon (1969) was able to discern both yearly incidence and source of contagion. Two major transmission trees covering 48 cases were traced. One of these trees included 32 users who could be traced back to the original initiator, the other included 16 users. Of the total 58 initiations to heroin, 46 were carried out by young men of the locality.

Zacune et al. (1969a) in their study of largely un-notified heroin users found that personal contact with four users enabled them to interview 32 of a total of 37 users. Prior to the establishment of a treatment center in the town studied by Zacune it appeared that the initial group of users existed to supply one another and to generally reinforce their identity as drug users. Studies of other populations using different drugs (e.g., Webb et al., 1969; Hawks et al., 1969) have confirmed this tendency for initiation to occur between familiar associates.

Causation

It has already been observed that drug dependence in the United Kingdom is not predominately a manifestation of poverty or minority group membership nor does it appear to be as frequently associated with criminality as is the case in the U.S., though the view that criminality is never a precursor but only a consequence of drug dependence in the United Kingdom is not borne out by the facts. The lack of relevant normative data precludes inferring causal significance but it would appear from some studies that the addict population is characterized by a high incidence of familial separation and disturbance.

Hawks et al. (1969) found that 41% of their methylamphetamine users had some definite or tentative evidence of neurotic disturbance in childhood. Slightly less than half had suffered parental bereavement or separation before they were 16 years old. Sixty-five per cent had not taken any examination while at school, and of those who pursued further education the majority had discontinued this prematurely. Consistent truancy from secondary school was reported by one-half of those interviewed. The degree of family pathology as assessed in terms of the frequency with which drinking problems, criminality, drug abuse and psychiatric illness in the parents and siblings was mentioned, while difficult to assess in the absence of appropriate normative data, appeared excessive. Among the addicts themselves a significant number had been heavy users of alcohol in the past. Of particular interest is the fact that those methylamphetamine users who had also used heroin were more likely to have been separated from their parents before they turned 16 than those

who had not used heroin (Hawks et al., 1970). Mitcheson's (1970) study of heroin addicts attending three day-centers produced similar evidence of family disturbance. Fifty-two per cent of the sample had experienced separation from one or both parents for a period of at least two years before the age of sixteen. Thirty-two per cent had been separated from both parents. Webb et al. (1969) found some tentative evidence of psychological maladjustment among university cannabis smokers.

CONCLUSIONS AND RECOMMENDATIONS

The studies reviewed in this paper have in the main concerned themselves with describing the characteristics of particular subjects defined as using a particular drug, admitted to a specific hospital or detained in a particular institution. While they provide a reasonably comprehensive account of the development of the British drug problem and the morbidity and mortality associated with it, they do not, by and large, consider the relationships prevailing between the variables described. That British research is largely of this demographic order is not inexplicable: the rapidity with which the problem has arisen and the need to take preemptive legislative action has dictated that the initial studies concern themselves with defining the extent of the problem and the characteristics of its devotees.

However understandable this preoccupation with demographic characteristics, there is an imperative need to consider not only the extent to which certain factors are disproportionately found to be associated with drug dependence, an assessment itself dependent on the existence of appropriate normative data, but also the association of factors.

It is frequently claimed that there is no typical addict and no descriptive categories equally applicable to all addicts. Lacking a set of categories which can be universally applied to all addicts or even addicts using a particular drug, it is at least arguable that any universality which exists is to be found in the relationship between variables rather than in the predominance of the variables themselves. While the age at which drugs were first used may vary considerably depending on the population studied, it might nevertheless be shown that in any of the samples the younger the age of onset the poorer the prognosis and the greater the diversity of drugs used.

Progression beyond the present demographic approach to research in this area will require that sufficient numbers be included in the sample to allow their subdivision into a number of preconceived categories which can then be run against other variables. If research into the cause of drug dependence is to assume other than its present demographic form its design must be motivated

by theoretical considerations. Data which is gathered for wholly empirical ends can rarely be lent, post hoc, a theoretical rationale. If it serves no other purpose, the theoretical model at least determines the selection of variables and directs their subsequent analysis.

Theoretical considerations aside, research into drug dependence is beset by a number of methodological problems. There exist no commonly accepted criteria of dependence and as a consequence there is immense variation in the cases studied. Conclusions are drawn from studies of identifiable cases with no assurance that they are representative of the total. In the absence of biochemical tests which allow us to assess the exact quantity and quality of drugs ingested, the determination of such information must necessarily rely on verbal report. Even were such tests available, their use would be limited to the immediate past and could tell us nothing about the addicts' previous drug use. The fact that the nontherapeutic use of drugs is an illegal activity increases the unreliability of self-report in any context where it is felt by the addict that the information supplied might affect his ability to get more drugs. The effect of drugs themselves on the accuracy of self-report is itself largely unknown. Despite these qualifications, with few exceptions information as to the personal and social history of drug addicts has been based entirely on the addict's self-report. While criminal, medical and employment histories may be checked, the reliability and validity of the more personal and probably more pertinent aspects of an individual's history are largely untested. The historical nature of many of the events inquired about adds further to their inaccessibility, added to which is the fact that while no one questions the importance of social factors in the initiation and maintenance of drug dependence, we are at present comparatively inept at assessing such factors in those settings presented by the addict.

Meeting these methodological and theoretical requirements demands prospective studies which, because of the variety of conditions studied in most settings, are likely to be uneconomical undertakings unless "at risk" groups are studied. Assuming that such groups can be identified, their division on socio-economic grounds should better permit a consideration of those more subtle psychological factors which have to date eluded assessment. It is the intervention of these factors which almost certainly accounts for the many exceptions observed when only gross social and economical variables are considered. Meeting these requirements also requires a degree of coordination between research and the assumption of a perspective which is denied the individual researcher. Unravelling problems like drug dependence and delinquency involving social, personal, and economic factors requires a strategy which few individual researchers can adopt. Except that such

complexity is entertained the alternative seems to be a multiplicity of studies reflecting the individual idiosyncracies of their authors and embodying a number of inevitable methodological inadequacies which prejudice their causal significance. The intractability of the causal problem is due not so much to the lack of individual research projects as to the lack of any research of sufficient dimensions to encompass the complexity of the problem.

ACKNOWLEDGMENTS

I am extremely grateful to those authors of unpublished reports who allowed me access to their data and to Mr. H.B. Spear for permission to republish certain tables.

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