

MEDICAL PRACTICE

Clinical Topics

Seven-year follow-up of heroin addicts: drug use and outcome

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Summary and conclusions

A representative sample of 128 of the patients who in 1969 attended London drug dependence clinics and received daily prescriptions for heroin was personally followed up seven years later. The mean age of the patients at follow-up was 32.7 years, and a mean of 12.8 years had elapsed since they first admitted to using heroin. Follow-up was successful in 124 cases (97%). Fifty-two people (41%) had stopped attending the clinics, 6 (5%) were in prison, 55 (43%) were still attending the clinics, and 15 (12%) had died. Abstinence from opiates had been achieved by at least 40 people, 33 having abstained for two years or more. Abstinence did not seem to have been replaced by dependence on other drugs, including alcohol. Sixty-two people (48%) were still using opiates; only 7 (5%) did so without attending clinics and obtaining legal prescriptions.

Introduction

We have followed up a sample of patients who in 1969 were being prescribed heroin at London drug dependence clinics

(DDCs). Earlier papers reported on the follow-up of this sample at about four¹ and six years,² for which Home Office records of addict notifications were used. Questions on the outcome of heroin addiction, however, can be only partially answered by studies that rely on data from other agencies. When secondary information is relied on, major unanswered questions remain about the drug use and social status of people who are no longer statutorily recorded as active addicts. Have they stopped using opiates or do they continue undetected? Have they transferred their dependence to other substances? These and related questions can be answered only by follow-up studies with personal contact and a high success rate. Accordingly we tried to re-interview the sample of addicts from 1969. We made personal contact with or traced to death 122 (95%) of the original sample and obtained information on two others. This first report gives details of the drug use of the patients at follow-up in 1976 and 1977, seven years after the original contact.

Sample in 1969

During 1965-7 several changes in the British approach to heroin addiction were implemented.^{3,4} A major consequence was the establishment of DDCs in 1968. From the spring of 1968 only doctors specially licensed by the Home Secretary could prescribe heroin and cocaine for addicts, which virtually restricted such prescribing to doctors working in DDCs. In 1969 we selected a one-third representative sample of all patients attending 13 of the 15 London DDCs and being prescribed daily heroin on an outpatient basis.⁵ At that time about 45% of the patients at London DDCs were being prescribed heroin, and London DDCs accounted for 80% of the DDC population in England and Wales. The sample constituted about 11% of the total DDC population in England and Wales. First interviews were conducted between March and November 1969 on 111 people (93 men and 35 women)—that is, 87% of the original sample of 128. The mean age was 25.1 years and mean reported length of heroin use 5.3 years. The mean dose of heroin prescribed was 140 mg daily (range 10-1140 mg); in addition some form of methadone (linctus, ampoules, or tablets) was prescribed for 91 of the patients who were interviewed.

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Present follow-up

Between June 1976 and November 1977 we attempted to trace, contact, and re-interview the sample. The interviews, most of which were tape-recorded and lasted several hours, combined structured and open-ended sections covering current and past legal and illegal drug taking and a wide range of personal, social, and medical aspects of dependence. Many questions permitted specific comparison with the 1969 interview data. We also made use of statutory record data on each patient during the follow-up period. The investigation was designed to provide a sensitive yet objective picture of each person's addiction.

By December 1977 we had followed up 124 patients (97%) out of the original sample. We made personal contact with 107, of whom 97 were interviewed in full and 10 in part with some reliance on contemporary secondary sources of information—for example, the staff of clinics and voluntary agencies, spouses, and parents. Personal contact was not made with two people but we obtained current information from contemporary secondary sources. Fifteen people had died. We failed to contact or gain current information on four people (3%). The average follow-up period was 7.6 (range 6.8-8.3) years, and the average age at follow-up 32.7 years.

Tracing, contacting, and interviewing was lengthy and time-consuming. Care was taken to be discreet in our inquiries. Some people were easy to trace, but for many the last known contact had been with the clinic some years before. Among the various agencies and sources we consulted were DDCs; birth, death, and marriage records in the UK and abroad; the NHS central register; general practitioners; hospitals; voluntary agencies; relatives and acquaintances; prisons; the Mental Health Index; and hostels and reception centres; and we called at old addresses and places we knew to be frequented. Nearly 400 letters were sent. Most interviews (79%) were conducted by us; the remainder, in the UK and overseas, were conducted by colleagues with drug-research experience. Seven of the people (5%) were living abroad, 78 (61%) were living in Greater London, and 26 (20%) were living in other areas of the UK.

SOCIAL STATUS

When first interviewed in 1969 all patients in the sample were attending DDCs as outpatients. Over the years the numbers declined,² so that at follow-up the number of patients attending clinics (55; 43%) was almost the same as the number not attending and living in the community (52; 41%) (see table I). Six were in prison when interviewed, five serving sentences and one on remand. All were using opiates when arrested. Of the patients attending clinics, five were hospital inpatients when interviewed.

MORTALITY

Eleven men and four women (12%) had died before the follow-up interview; these proportions matched the sex ratio of the original sample. The mean age at death was 28.9. Deaths were evenly distributed over the seven to eight years of the follow-up and yielded a death rate of 16.7/1000 heroin addicts yearly, which was appreciably lower than the rate (27/1000) quoted by James⁶ for male British heroin addicts in the 1960s. Clinical notes, death certificates, and data from coroners' inquests indicated that all were drug-dependent at death. The most common cause of death was respiratory failure due to opiate and barbiturate poisoning. Exceptions were one person who burned to death at home, another who died of carbon monoxide

poisoning, and one aged 55 who died in hospital of renal failure secondary to amyloidosis. Suicidal behaviour was apparent in two cases, but most verdicts returned by coroners fell into the uninformative category of "addiction to drugs."

DRUG USE

One purpose of the study was to get detailed information on drug use that could not be obtained from records. For the earlier follow-ups in this study all information had been derived from records, but these say nothing about the drug use of those who no longer attend DDCs and little about the drug use of those who do attend. Table I gives drug use cross-tabulated against social status. All data refer to drug use in the 28 days preceding the follow-up interview or contact.

Forty of the original sample (31%) had stopped using opiates and were living in the community. We were uncertain about the drug use of six people, although for reasons discussed below we suspected that they were abstinent from opiates. Five people who were in prison were abstinent from opiates. Sixty-two (48%) were still using opiates at follow-up.

Opiate users

Fifty-five of the 62 people still using opiates were attending DDCs and receiving daily prescriptions for heroin or methadone or both. Nearly all of these 55 patients were injecting drugs, and only five confined their use of opiates to oral methadone. Heroin alone was prescribed for 13 patients, whose average daily dose was 220 mg (range 30-600 mg). Methadone alone was prescribed for 20, the average daily dose being 70 mg (range 10-140 mg). Seven of these 20 patients received only oral methadone, all the others also received some form of injectable methadone. Twenty-two patients received both heroin and methadone, and for these the average daily doses were 140 mg of heroin and 60 mg of methadone. The average daily prescription for heroin, regardless of whether the patient was also receiving methadone, was 170 mg. This was higher than the average dose for the sample in 1969. Individual doses had not increased, and the rise in the overall average is explained by the absence of patients who in 1969 received low doses but were not being prescribed heroin at follow-up. The highest opiate prescription was for 500 mg of heroin with 150 mg of methadone daily and the lowest for 10 mg of methadone.

Six people who injected opiate drugs were not attending clinics. Of these, three were daily users, and we therefore supposed that they were physically dependent. Another one used opiates at least once a week but not daily, and the remaining two had injected opiates only once in the previous 28 days and had in fact maintained an intermittent use of opiates for some time without resuming physical dependence. These data show that few people in this sample continued to use opiates without attending clinics.

Persons abstinent from opiates

At least 40 people (31%) were abstinent from opiates and living in the community. A further five were abstinent and in prison. Table II gives the length of time since their last physical dependence on opiates. When considering only those who were abstinent and living in the community—that is, excluding those who were in prison or whose drug use was uncertain—the mean (\pm SD) time from last physical dependence to interview was 4.7 ± 2.3 years (range 0.8-8.3 years).

TABLE I—Use of drugs during 28 days preceding follow-up tabulated according to social status. Results given for 113 patients (88% of sample) alive at follow-up (percentages in parentheses)

	Attending clinics	In prison	Others	Total
Opiate users	50 (39)	1 (1)	6 (5)	62 (48)
Persons abstinent from opiates	5 (4)	1 (1)	1 (1) 5 (4) 3 (2)	
		4 (3)	15 (12) 16 (12) 6 (5)	45 (35)
No (%) with uncertain drug use				6 (5)
Total	55 (43)	6 (5)	52 (41)	113 (88)

TABLE II—Number of years that people were abstinent from opiates

No of years	<1	1	2	3	4	5	6	7	8	Total
No (%) of patients abstinent	2 (2)	5 (4)	3 (2)	6 (5)	4 (3)	4 (3)	7 (5)	8 (6)	1 (1)	40 (31)

Thirty-three people (25%) were known to have been abstinent from opiates for 24 months or longer.

If people were not using opiates we tried to ascertain whether they were using any other drugs, because it has been suggested that people who achieve abstinence from opiates may switch their dependence to other drugs. On studying the drug use of those no longer using opiates and living in the community we found that nine had been using psychoactive drugs including alcohol daily in the 28 days before follow-up (see table I). Of these nine, one was a heavy drinker (100 ml or more of alcohol each day in the previous 28 days; 100 ml of ethyl alcohol is contained in five pints (2.8 l) of average English beer⁹). Five were using low doses of tranquillisers, antidepressants, or hypnotics prescribed by general practitioners and not used for intoxication. Three were daily cannabis users. Fifteen had smoked cannabis occasionally in the past 28 days (table I), six less than weekly, six weekly but not daily, and three not known. Sixteen did not use psychoactive drugs at all: they reported that they had been completely drug-free in the 28 days before the interview.

Some of those who were abstinent from opiates were recently interviewed again and asked without prior notification for a urine sample. Of the 15 patients contacted, 14 gave urine samples, which yielded negative results to tests for opiates, methadone, cocaine, methylamphetamine, amphetamine, methaqualone, nitrazepam, other benzodiazepines, and barbiturates. One urine sample was not obtained.

In this sample opiate dependence does not seem to have been replaced by dependence on other drugs. The presence of one heavy alcohol user and five daily users of prescribed psychoactive drugs among 40 people known to be no longer using opiates corresponds to survey findings on the use of alcohol and psychoactive drugs in the general population.^{7, 8}

Persons with uncertain drug use

We found out little about the drug use of six people. We believed that they were not using opiates but were less certain about their use of other drugs. They had not attended DDCs in the UK and Ireland since 1974 or earlier, and none had had a drug conviction since 1969—both of these are strong indicators of abstinence. One, who was contacted by telephone, told us that he did not use opiates, but further contact was lost. One had emigrated to a country where opiate use is rare and would be extremely hazardous for an immigrant, and his mother told us that he was not a drug user. The mother of another told us that he had stopped taking drugs but had been consuming large quantities of alcohol when last seen two years before. One severely ill patient had returned to the US, and clinical opinion was that she was unlikely to be still alive. There was no information on two others. These six people were therefore categorised as uncertain (table I). If they were abstinent from opiates as the evidence suggests then the number not using opiates and not in prison increases from a minimum of 40 (31%) to a maximum of 46 (36%).

Comment

Our experience shows that it is possible to conduct follow-up studies of heroin addicts with a high rate of personal contact. After seven years with no contact between us and the patients we managed to follow up 97% of the original sample.

In this first report we have given an overall view of the drug use of patients who in 1969 were physically dependent on and receiving daily prescriptions for heroin. Seven years after our first contact with them, eight to nine years after their first attendance at DDCs, and on average 12.8 years since they began to use heroin, we found that 15 (12%) had died, 55 (43%) were still attending drug clinics and being prescribed opiates, 6 (5%) were in prison, and 52 (41%) were not attending clinics. Sixty-two people (48%) were still using opiates daily and 40 (31%) were no longer physically dependent on opiates and living in the community. There is some movement between clinic attendance

and non-attendance (including that due to imprisonment), such that in any one year about 15% of non-attenders might return to clinics.² We therefore expect about eight people not attending to return to a clinic and resume using opiates. There would be a corresponding movement away from attendance, and overall each year the proportion of the sample not attending will continue to increase. As 43% of the original sample were still at DDCs after eight or nine years clearly at least part of the clinics' work is concerned with chronic cases.

Our study shows that continued opiate use is rare among patients who stop attending clinics and live in the community, as only three such people were able to sustain daily use of opiates on illicit supplies. One other was using opiates weekly but not daily, and a further two were occasional users. We found that there were a few people who were able to use opiates occasionally without becoming physically dependent again. Apart from the six opiate users few of those who had stopped attending clinics and lived in the community continued to use illegal drugs (excluding cannabis) regularly, nor did they appear to substitute dependence on other drugs, including alcohol (as assessed on frequency of use) for their opiate dependence. The use of legitimately obtained psychoactive drugs and the moderately heavy use of alcohol (10% and 2% of those not attending clinics, respectively) approximated to or was less than that found in a normal population.^{7, 8}

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If a blood pressure reading in the standing position is higher than in the recumbent position what might be the reason and which reading is taken as the individual's blood pressure? In asymptomatic labile essential hypertension how many times should the blood pressure be taken to ensure that the norm in such cases has been accurately arrived at?

The occasional small rise in blood pressure that occurs on standing is associated with a rise in plasma concentrations of both noradrenaline and angiotensin. It is presumably a slight over-compensation in the normal homeostatic mechanisms, and measurement in the upright position is therefore unlikely to make much difference to the individual's recorded blood pressure. The absence of symptoms should not deter a clinician from starting drug treatment. There is no proof of benefit from antihypertensive drugs when diastolic pressures are below 110. Many clinicians treat such patients, but they are anticipating the outcome of current trials. Treatment should not be started until raised readings have been seen on at least four separate occasions. "Labile" hypertension is probably not an entity, and such patients ultimately develop sustained raised blood pressure.