

What happen to heroin users in the long term?

Results from a 22 year British follow-up

Ronaldo Laranjeira, Clive Tobutt, Colin Taylor, Edna Oppenheimer

National Addiction Centre

Summary

This paper reports on the 22 year follow-up of a cohort of heroin addicts that were first interviewed in 1969. At the follow-up point 43 of the original sample of 128 had died (33.6%). Personal interviews were conducted with 63 subjects, representing 49.2% of the original sample or 74.1% of those believed to be still living. Of the 63 subjects who were personally interviewed 23 (27.4%) were current users of opiates while 40 subjects (72.6%) were currently off. It is discussed the stability of the drug use status over the follow-up period. A previous seven years follow-up results is compared with the twenty two years opiate using status. A comparison with two american long term follow-up studies are made. Policy implications of these results is discussed.

INTRODUCTION

This paper will report on the follow-up of a cohort British heroin users who were first interviewed by the Addiction Research Unit's staff in 1969, (Stimson, 1973) during a historically important period in the evolution of British drug problems and policy responses. All these subjects were at that time receiving prescriptions of injectable pharmaceutical heroin from the National Health Service (NHS) clinics which they were attending. A prescribing approach which today would seem egregious was at the start of this cohort's treatment career a standard practice. To provide context for the present report something of the relevant historical background.

In the 1960's a steep increase in the misuse of heroin occurred in Britain, concentrated in the London area (Bewley, 1965; Bewley, 1966; Spear, 1969). The source of the drug was almost exclusively direct prescribing to addicts by GP's, or the overspill of this laxly prescribed pharmaceutical heroin to the black market, and the usual route of use was intravenous injection. The second Brain Report recommended that this epidemic development should be met by limiting the right to prescribe heroin or cocaine to addicts in the treatment of addiction, to specially licensed doctors operating from designated centers. Those provisions were given legislative basics in the Misuse of Drugs Act 1967, and in accordance with a Regulation made under that Act the first Drug Dependence Clinics or Units (commonly known as DDU's), were opened in London in 1968.

The general policy of these clinics was to prescribe injectable heroin to addicts at a dose determined by estimated need (Connell, 1969). The drug was collected by the patient on a daily prescription basis from a pharmacist. On occasion cocaine also was prescribed by the clinics. The intention was to bring drug users into a useful therapeutic contact, stabilise them on an agreed initial drug dose, and to then work toward broader treatment goals and a gradual reduction in dosage (Edwards 1969). It was further believed that such prescribing would remove the individual drug user from illicit dealing and undercut the blackmarket.

Over the course of the next decade, gradual changes took place in the modus operandi of the clinics. They included not only a shift from a public health approach to one which was more geared to individual needs and the expectation of change, but also included a change in the type of drug prescribed and the dosage. In his historical account of the initial move by drug clinics in the early 70s from the prescribing of injectable heroin to injectable methadone, and the subsequently slow build-up of a case load to whom oral methadone was now being prescribed. The randomised trial of injectable heroin maintenance versus oral methadone maintenance (Mitcheson and Hartnoll, 1978; Hartnoll et al, 1980) was conducted at this time and reflected the uncertainty about the suitability of different prescribing options. By the late 1970s, the prescribing of injectable drugs had fallen out of fashion and the usual clinic prescription had become oral methadone rather than injectable heroin (Edwards, 1981). Furthermore, over this period, the clinics also moved to more conservative levels of methadone dosage, with anxieties about the organisational implications of continued provision of long-term maintenance (Strang, 1984; Ghodse et al, 1985).

As a result of the accumulating experience of the clinic doctors, the prescribing of injectable drugs gradually fell out of fashion and by the late 1970's the usual clinic prescription was for oral methadone rather than injectable heroin (Edwards, 1981). Over time the clinics then moved towards a more conservative level of methadone dosage, with reluctance to provide long term maintenance (Strang, 1989).

A further shift in clinic policy occurred in the mid 1980's following the advent of HIV infection and the realisation that injecting drug users constituted a major potential source for spread of the Aids virus (Strang and Stimson, 1990). Oral methadone was again prescribed more freely, in rather higher dosage, and in the longer term GP's also were encouraged to prescribe this drug.

So much for a brief description of the phasicness in a continually evolving policy experiment, mounted in the face of a continually changing picture of black market supply. By the early 1970's the major source of the heroin was illicitly imported heroin rather than pharmaceutical diversion drug. The essential of the legal framework have though remained unchanged, and a licensed doctor practising from a designated centre is still permitted to prescribe heroin or cocaine in the treatment of addiction and according to clinical discretion. Not more than about a handful of addicts are in the UK at present being prescribed injectable heroin.

What then has happened over time to the addicts who were taken into treatment by the newly established DDU's in 1969 and prescribed injectable heroin as a treatment element of first choice? Are those patients mostly today still on drugs, securely off drugs, or pursuing a fluctuating on and off course? How many of them have died? In 1969 the Addiction Research Unit conducted a one in three representative sample survey of all addicts who were being prescribed heroin at London DDU's (Stimson and Osborne, 1970). The data base established by that survey provides unique opportunities for follow-up research. We have earlier published results of a study at the seven year point (Stimson et al, 1978), and are now able to take the picture forward to 22 years the original study intake, using multiple record sources and where possible, personal interview with subjects. We have earlier reported the mortality data at the 22 year point (Oppenheimer et al, 1994).

No heroin follow up study of comparable length has previously been attempted in Britain. We believe that the information which we now report can offer some general insights into the long term outcome for heroin dependence. The careers of any particular addicts cohort will though to an important extent be influenced by the kinds of fluctuation in clinical policy and black market drug availability which we described above, and this study may therefore also be expected to cast some light on the significance of these epochal influences on long term outcome.

THE FOLLOW UP STUDY

Methods

The Baseline Sample

The 1969 sample comprised 128 subjects and was a one third random selection of all the heroin injectors who were at the time attending 13 of the 15 recently established London DDU's. The mean age on recruitment to the study was 25 years (range 17 to 52 years), and the mean reported time from first heroin use was 5.3 years (range 1-18 years). There were 92 men (72%) and 36 women (28%).

Record Searches

Multiple strategies were employed which included (i) search for death certificates through the Office of Population Census and Services, (ii) inspection of Home Office Addicts Index (Edwards, 1981), (iii) inspection of hospital records.

Personal Interviews

All living subjects who could be traced and who agreed to collaborate were interviewed. Interviews lasted 90-120 minutes and combined structured and openended approaches were used. Enquiry was directed at legal and licit drug use, and also covered a range of personal, social, and medical issues. The overall framework for the reconstruction of past events was provided by the life chart section of the schedule, which carried forward enquiry from the 1976 interview point to the end of 1990. Prompts were employed relating to significant personal happenings or world events. Subjects were then asked to indicate for each relevant year the number of months spent in different activities including, time spent using prescribed opiates, non prescribed opiates and other drugs including time spent attending DDU's, time in hospital and other institutions. Careful enquiry was made into use of alcohol. So far as possible the same methods were used at this point as at the study's baseline and at the 7 years follow-up.

Criteria for Classification of Opiate use at Interviews

A respondent was classified as a current "user" if they had used opiates at all (licit or illicit) in the 4 weeks prior to interview, and where otherwise classified as "off".

RESULTS

Completeness of Follow-Up

At the follow point 43(33.6%) of the original sample had died. Personal interviews were conducted with 63 subjects, representing 49.2% of the original sample or 74.1% of those believed to be still living. Mean age of interviewed subjects was 45.9% years (range 39-61) with 51 male and 12 female. Among the remaining 22 subjects who were alive and not interviewed (17.2% of the original sample, 25.9% of those still living), we obtained considerable information on all but 7 subjects from a mix of other sources including, for example, the Home Office Index, hospital records, or from what family or friends were able to report. Thus in summary tracing was complete in terms either of death or completed interview for 82.8% of subjects at the 22 year follow-up point. We obtained information

without a personal interview on 11.7%. Only 5.5% remained as those on whom we obtained no significant information although there was no evidence that they had died.

Deaths

As already noted the mortality data from this study have been reported elsewhere and we will not here repeat these data. Nearly all deaths were either a direct or indirect consequence of drug use.

Opiate use status of the Interviewed Subjects at Follow-Up

Of the 63 subjects who were personally interviewed 23 (27.4%) were current users while 40 subjects (72.6%) were currently off. Among the 23 current users in the interviewed sample, all were in contact with DDU's and receiving an opiate prescription, and of these 12 were being given and were injecting injectable drugs (9heroin and 3 methadone). The remaining 11 were receiving oral methadone, of whom two were also injecting drugs. Nineten of these 23 subjects had been receiving an opiate prescription for virtually the whole of the previous 22 years. Only 6 of these currently showed an exclusive use of opiates, which most had over time concomitantly used a variety of illicit drugs.

None of the 40 interviewed subjects who were off opiates were currently in contact with a DDU, and on average their last such contact had been 15.6 years previously (range 5-22 years, 1st-3rd quartiles 13-20 years). The average length of continuous abstinence from opiates among this currently abstinent group was 14.9 years (range 1-21 years, 1st-3rd quartiles 5-17 years). In general therefore the picture was of stable abstinence from opiates with cessation of clinic contact usually a reliable marker of the subjects being off opiates. There was little substitution of opiates by other drug, and only 11/40 (27.5%) had used other mind acting drugs at all during the last 5 years, and such use had at most transient or short term. As for use of alcohol, 2/40 (5%) were rated as heavy drinkers in terms of a sustained daily intake of greater than 114g/day during the 4 weeks prior to interview (Tobbutt et al 1996).

OPIATE USE

Level of Agreement between Self Report and Addicts Index

None of the subjects at the 22 year follow up who claimed to be off opiates were currently on the Home Office Index, whereas every patient who reported current opiate use at this point was to be found on the Index. There was thus complete concordance between claimed opiate using status and on (on/off Index) status. A reasonable inference which can be drawn is therefore that subjects who are no longer on the Index are likely to have been abstinence from this class of drugs rather than their having moved to non-prescribed opiates.

The probable outcome for subjects who were not interviewed at 22 year follow-up

The match between “off” status and non-appearance on the Index for the 63 interviewed subjects provides a basis from which to examine the possible outcome of those individuals who were not personally contacted. Only 4 of these 22 had been notified in the previous year. Of the remaining 18, the most recent known prescription of opiates for treatment of addiction, as reported through the Index, was at a mean interval of 7.1 years prior to interview (range 11 to 22 years). It can therefore with a fair degree of confidence be assumed that the 22 subjects who remained un interviewed should be apportioned as 4 users and 18 off - with the un interviewed subjects allocated on this basis, the overall outcome for the 12 subjects at the 22 year point would then be as follows: 43 Dead (34%), 27 “Users” (21%) and 58 “Off “(45%).

Distinctiveness of the “User” and “Off” groups over time

The sharp contrast in the opiate using behaviour of the two interviewed groups over time is shown graphically in Figure 1. These 63 subjects all started out in 1969 with opiate drug use at or near 100% of the time. The 23 subjects in the “user”group, maintained an almost 100% time involvement with opiate and non-opiate drug for the whole follow-up period. Diverging markedly from that pattern, the “off”group from an early point in the chronology began to show a monotonic fall in percentage time spent, as a group, in either opiate or non-opiate drug use. The distinctiveness of the two groups thus relates not just to the end point, but to their behaviour over time.

The relationship between 7 year and 22 year opiate using status

One subject was untraceable both personally and by record search at both the seven and twenty two year follow up points, and will be excluded from this analysis. Putting together information for the two follow-up points and classifying all subjects as either “user”, “off”, or dead, figure 2 shows the movement between categories over time for the remaining 12 subjects. Two broad conclusions can be drawn: (i) Those who were “off” in 1976 had a very good (80%) chance of still being “off”in 1991, with only a minority moving to the user category (8%), or dying (12%); (ii) Those who in 1976 were “users”had in contrast a relatively poor long term outcome: allowing for rounding 37% were still “users” in 1991, 35% were dead, and 27% were “off”.

DISCUSSION

Consideration will first be given to certain aspects of methodology. We go on to summarise the core findings, and will then discuss the policy implications.

Methodology

A search of the OPCS records can determine whether a subject is dead ou alive at time of follow-up. This study then additionally demonstrates that reference to the Home Office Index will establish with considerable accuracy which surviving subjects are using or off

opiates. A study based simply on record search is thus likely to yield important outcome information without recourse to investment in the attempt to interview every living subject. It cannot though be assumed that the match between the Index and interview results which was found in this instance would inevitably pertain with other all cohorts. The interpretability of a record based study will therefore always be much strengthened by personal interview of at least a sub-sample to validate the opiate use status suggested by the Index or other records. Furthermore, only personal interview will yield information on non-notifiable drug use and use of alcohol, or give details on health and social adjustment. Vaillant (1966) in a 12 year follow up of New York narcotic addicts similarly found a match between record search and interview information. As he later remarked, "Most active addicts leave multiple institutional footprints behind them" (Vaillant, 1973).

Why subjects who relapse to opiates should then in general fairly quickly re-contact clinics rather than continue to obtain their supplies illicitly is a thus far unanswered question. There is evidence that at an earlier stage of a heroin using career, addicts will often maintain themselves on drugs for several years without resort to a DDU, and yet a subject who has used a clinic on previous occasions seems on relapse to return to a clinic without much delay. The explanation may be partly in a learnt distaste for a life dominated by the search for illicit drugs, and perhaps also in the learnt ability to cope with the clinic system.

The Core Findings

The core findings which can be derived from this study stand out clearly. Taking the unwelcomed facts first, there is the 34% mortality and the findings that 21% of the cohort were still using opiates 22 years after the original clinical attendance and had been doing so for more or less persistently over the whole follow-up period. Taken together these statistics seem to support the image of heroin dependence as a malign and potentially rather intractable condition.

The more heartening fact which, stands out with equal clarity, is that after 22 years almost half (45%) of these subjects had established a stable, long term abstinence from opiates, and they had in general not substituted alcohol or other drugs. Among the surviving patients more and more had gradually over time moved over to stable abstinence. As a consequence the cross sectional picture at 22 years was far more positive than that seen at the 2 year point, whereas the 10 and 22 years cross-sections were much more similar most but not all the positive change occurred in the first 10 years. The finding that abstinence from opiates tends to be stable once achieved, is closely in line with Vaillant's 20 year New York follow-up. Similarly Hser et al (1993), in a study of Californian addicts, found considerable stability between approximately 10 and 20 year follow-up points.

In summary the general conclusion must therefore be that heroin dependence is a condition which carries an appalling threat, but equally and more cheerily it is a condition from which a substantial proportion of users will recover. It is the sharpness in contrast between the two types of life course which stands out.

Policy Implications

The fact that two major U.S. long term studies of opiates users have been published (Vaillant, 1973; Hser et al, 1993) invites the question as to whether British heroin users have over comparable follow-up intervals fared markedly worse or better than their American counterparts. Data from the present study and the two American reports are summarised in Table 3. The British treatment system which our subjects experienced at the earlier stage of their careers differed markedly from the parallel U.S. situations in that heroin was being prescribed, but although some prescribing of injectable drugs has continued the trend in Britain has been towards American style oral methadone prescribing. The New York sample were voluntary inmates in Lexington but many were subsequently subjects to parole supervision, while the Californian Civil Commitment scheme involved a high degree of coercion. Sample characteristics, employment and living conditions and the availability and purity of drugs all differed across samples. Thus the situation which presents here is not that of a controlled trial of different ways of handling addiction, with other factors held constant. Furthermore, definitions and methodologies varied across studies.

With these provisos born in mind it is nonetheless useful cautiously to exploit the availability of these two major U.S. studies as basis for comparison with UK findings. The comparisons which are made can properly though only be in broad terms, rather than at level of detail. Within that perspective we could offer the following comments :

(i) Mortality - Vaillant's study barely suggests a lower mortality than that experienced by the British cohort (23/100 (23%) or 1.30% p.a. vs 43/128 (34%) or 1.84% p.a., $z=1.34$, NS), and the difference between the Californian and British mortality experience too is not significant (163/581 (28%) or 1.36% p.a. vs 43/128 (34%) or 1.84 % p.a., $z=1.769$ $p<.08$ NS). The seemingly higher mortality rate in the British sample may in part be an artefact produced by missing data in the two American studies. Vaillant searched New York state rather than national death certificate records, and the basis for the California death search is unclear.

(ii) Percentage subjects still using opiates or incarcerated at follow-up - Put conservatively, the British results are not worse than the U.S. findings at the follow-up point (27/84 or 32% vs 24/77 or 31%, $X^2(1df)=0.018$, NS), and are significantly better than the Californian figures (27/84 or 32% vs 203/418 or 49%, $X^2(1df)=7.598$, $p<.006$). If missing data were taken into account for the two American studies reducing possibly the numbers alive, the comparative advantage of the British outcome might well be accentuated. The inference here might therefore be that the fact that a small proportion of British addicts were still receiving prescribed opiates 22 years after first clinic attendance should not be too readily interpreted as evidence of clinical entropy. In very different social and cultural circumstances and within a different treatment context, as many if not more American addicts were still using opiates, and in New York or California they were obtaining their drugs rather more often from the streets than was the case in the U.K.. Clinic policies in relation to very long term maintenance should be further analysed but it may be necessary to accept that whatever the policy which is being pursued, there will be a residuum of addicts whom it is difficult to wean of all drugs.

(iii) Percentage of subjects off opiates at the follow-up point - Missing data again makes strict comparisons difficult but as observed to what has said in (ii) above, there is nothing to suggest that the British sample did worse than the subjects in either of the American samples, and they almost certainly have had a better outcome than the Californian group (45% vs 22%, $X^2(1df)=28.19, p<.0001$).

The overall conclusion must be that the similarities between the pictures given by these three studies are more apparent than are gross differences. Despite variations in sampling and backdrop, the outcome for urban illicit opiate use starting when subjects are in their early 20's is likely, over 22 years to be marked by high mortality, a significant minority continuing with intractable drug use, but also by a significant proportion achieving stable recovery. The availability of treatment is likely to ameliorate the worst consequence of opiate dependence (Vaillant, 1973; Hser, 1993; O'Donnell, 1969), but there is also a certain innate imperative in this type of addiction once it is established. In every sense and given the costliness of the established condition as seen in the 22 year perspective, one certain policy implication must be that, prevention is better than cure.