A 20-Year Follow-Up of New York Narcotic Addicts

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A group of 100 New York narcotic addicts first admitted to the US Public Health Service Hospital in Lexington, Ky in 1952 have been followed for 20 years. Over the period, 23% died—mostly of unnatural causes. In 1970 only 25% were still known to be using drugs; the status of 10% is uncertain; and, depending on definition, 35% to 42% have achieved stable abstinence. For 20 years, both voluntary hospitalization and imprisonment failed to produce abstinence.

Compulsory community supervision, usually via parole, and methadone maintenance were far more effective. There was no fixed age that addicts became abstinent and chronicity of past addiction did not destroy subsequent chances of abstinence.

"Almost all heroin addicts, it is true, do stop taking heroin from time to time. But almost all subsequently relapse. Among those who do not relapse, roughly half become skid-row alcoholics."[1(p528)] This pessimistic view authoritatively expressed by Brecher and the Editors of *Consumer Reports* is one that is commonly held and often confirmed by short-term follow-up studies—once an addict, always an addict. In order to disprove this point of view and to temper recent criticism of methadone maintenance, civil commitment, and therapeutic communities,[2-6] proper understanding of the natural history of narcotic addiction is crucial. But unfortunately, the natural history of a chronic illness must always come from those who contracted it decades before, and such studies are rare.

This paper will report a 20-year refollow-up of 100 New York City heroin addicts. Several years ago, these data were reported as a 12-year follow-up.[7-10] Virtually all the "postwar" addicts have now passed their 40th birthdays and their lives help us to visualize what happens to addicts as they mature. The present data suggest that unless adequate therapeutic intervention is made, there appears to be a significant number of addicts who will remain addicted, alive, and in trouble well past age 40. Few addicts recovered "spontaneously," and success rates of even 20% after a given treatment may be a reason for satisfaction, not despair. At the same time, once addicts achieve stable remission, such remission may be indefinitely maintained.

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Methods

The sample followed was a group of 100 male heroin addicts from New York City who, 20 years ago, were hospitalized for the first time at the US Public Health Service Hospital in Lexington, Ky. In 1952 the Lexington Hospital was a principal, but not the only, voluntary treatment resource for adult New York narcotics addicts. Adolescent addicts were inadequately represented; addicts able to elicit the help of social agencies were overrepresented. With these caveats, the addicts in the sample were probably a fair sample of postwar New York City addicts. In order that the sample would more correctly reflect urban addicts currently at risk, Chinese and addicts over 50 were excluded. The sample chosen included 50 consecutive black and 50 consecutive white first admissions. Thirty percent of the combined sample were Puerto Rican or of Central American ancestry. Nine percent had attended college, but a majority were high school dropouts. All but three were physiologically addicted to opiates; 82% had been addicted for more than a year. Fifty-six had engaged in delinquent behavior prior to addiction. Seventy-five percent had come to Lexington voluntarily. The average age of first illegal drug use was 19; the average age of narcotic addiction was 23, and of first admission to Lexington, 25. About a quarter of the sample became physiologically addicted in adolescence, and over half between 1949 and 1951.

Of the 100 men in the sample, 98% were followed with certainty until ten years, and 96% were followed with certainty until 15 years after the start of their addiction. Virtually all data obtained were prospectively collected, and the methodology of the 1964 follow-up has been reported fully elsewhere.[8,10] The information from 1965 to 1971 depended upon less thorough follow-up. In 1971, all the 100 addicts in the original sample were searched for by myself in the files of the New York City police and in the files of the

Bureau of Narcotics and Dangerous Drugs. The records of the New York City Narcotics Registry, which had privileged access to voluntary agencies not reporting to law enforcement agencies, were also checked. For men whose New York City residence could not be verified, FBI criminal identification sheets were obtained via fingerprint identification. These reports record most serious convictions anywhere in the United States.

The files of the Phoenix Houses, Rockefeller University's Methadone Registry, and the New York State Department of Mental Hygiene were also checked. The names of all addicts who might be dead were checked against the New York City Department of Health records of vital statistics. For 72% of the surviving men, valid social security numbers were known. Pooled data regarding employment records were obtained. Elaborate precautions were taken to protect confidentiality.

Results

Table 1 suggests that by 1970, a minimum of 35 men had achieved *stable abstinence*. By 1964, 32 of these men had already achieved a minimum of three and an average of eight years of documented community abstinence and survival. (Documentation included several of the following for each of the 35 men: interview, relatives' reports, social security employment records, parole officer reports, absence of arrests, and of hospitalizations.) By 1971, all 35 men had gone for at least nine years without being reported as users of narcotics by any law enforcement or voluntary agency.

In the 1965 follow-up, 30 addicts had been cited as reflecting stable abstinences.[10] Of these, two had died soon after abstinence for reasons other than narcotics; and in 1966, one man relapsed briefly to narcotics. These three men are not classed *stable abstinence* in 1970. For the other 27, no subsequent record of drug use was discovered. After 1965, although no effort was made to relocate the individuals in the community, there was indirect evidence that this subsample remained both abstinent and well. Valid social security numbers existed for an unselected sample of 20 of these 27 men. Grouped data revealed that 70% of these men were working regularly from 1962 to 1971 and were still alive in 1972. Twenty percent were known to be still alive and working irregularly. The remaining two men without tangible evidence of survival and employment corresponded to the two men who on interview in 1964 had achieved stable abstinence without any reported earnings during the preceding six years.

In Table 1, *active narcotic addiction* was defined as men reported to be abusing opiates within 12 months of each specified anniversary. Table 1 shows that during the 18th year after hospitalization (roughly the 20th year after the start of addiction), only 25 of the original sample were thought to be still addicted. (Actually, four of the 25 were last reported addicted in 1968.) Except for periods of prolonged institutionalization, none of these 25 men had ever achieved more than three consecutive years of abstinence. Since 1952, each of these 25 men had averaged seven voluntary hospitalizations, eight imprisonments, and had spent an average of four years in institutions. (Forty of the 100 men were classed as addicted for 15 or more of the 20 plus years that had elapsed since they first became addicted.)

Of the 17 men classified as *uncertain status* 18 years af-

Table 1.—Outcome of 100 Heroin Addicts at Age 40 and at 3 Points in Time

	Years After First Hospitalization			
	5 Yr	10 Yr	18 Yr	Age 40
Stable abstinence	10%	23%	35%	35%
Uncertain status	31%*	25%*	17%	13%
Dead	6%	11%	23%	17%
Active narcotic addiction	53%	41%	25%	35%

* Roughly a quarter of these men were in jail and returned to drugs on release. Thus, they have been classed as active addicts. As addicts got older, long jail sentences were rare and did not account for "uncertain status."

Table 2.—Cause of Death of 23 Addicts

Natural causes	2
Unknown (not natural)	3
Accident	2
Murder or suicide	4
Secondary to alcoholism	2
Narcotism—"overdose"	7
Infection from narcotism	3

Table 3.—Number of Years of Addiction Prior to Death or to Stable Abstinence

Years of Addiction Prior to Abstinence or Death	Addicts Achieving Stable Abstinence,* N = 40†	Addicts Who Died, N = 23
0-2	6	2
3-4	6	0
5-6	8	4
7-8	7	1
9-10	2	3
11-12	5	1
13-14	2	2
15-16	3	3
17-18	*	4
19-20		2
More than 20	1	1

* For most men follow-up period for achieving abstinence only covered 15 years after first addiction (1965), but for death the follow-up covered 20 years or more (1970). This was because to call an addict "stably abstinent" required five years or more of observation after last known period of addiction.

† This number excluded two addicts not physiologically addicted to narcotics when admitted to Lexington and one man who continued to use demerol under medical supervision; it includes 2 men who died less than 5 years after achieving stable abstinence and 6 men who probably achieved stable abstinence by 1965.

Table 4.—Age When Stable Abstinence Achieved

Age	No. Becoming Stably Abstinent
20-22	3
23-25	6
26-28	11
29-31	9
32-34	5
35-37	3
Over 37	3

Table 5.—Variables Unrelated to 20 Year Outcome
Race
Education*
Parental loss*
Maternal "Overprotection"
Rapid relapse after first hospitalization
Antisocial before drugs
Years of addiction before Lexington*
Amount of opiates used before Lexington
Began opiates <21*
5 or more hospitalizations for drugs
Voluntary first admission

* Significant after 12-year follow-up.[10]

Table 6.—Relative Efficacy of Five Modes of "Treatment" in Facilitating Abstinences of a Year or More

	1952-1964		1965-1970	
	"Treatment" Exposures	% Followed by Abstinence	"Treatment" Exposures	% Followed by Abstinence
Voluntary hospitalization	270	3	91	2
Short imprisonment (<9 mo)	279	3	84	3
Long imprisonment (9+ mo)	46	13	4	25
Prison and parole	30	67	4	100
Methadone maintenance	...	...	15	67

ter hospitalization, only one had any known record of active addiction in the preceding five years. Seven were known to have survived until the present but were classified as uncertain status for the following reasons: four had been stably maintained on methadone for four years or more; one had relapsed briefly to heroin; two were reported clean in 1964 and in 1970 but information was sketchy. Ten had not been heard from for over five years: of these, two usually only "chipped," and in the past had often avoided detection; two had been abstinent for at least a year before last contact; six were actively addicted when last heard from. The current status of these ten remains conjectural.

Of 23 addicts defined as *dead* in 1971, death was documented by New York City death certificate in 17 cases. In four cases, death was based on post mortem fingerprint identification by out-of-city police. In one case, it was based on identification by the family and family physician. The final case was only presumed dead. (In 1956, the subject abruptly disappeared from parole supervision and in the following 15 years never again appeared in the FBI records. In 1965, after ten years, neither his family nor the Social Security Administration had any knowledge of him. There was a rumor on the "street" that he had met sudden death around 1956.)

During the first 20 years after addiction, virtually none of the addicts who died, died of natural causes and roughly half died directly from their addiction. The causes of death in this sample (Table 2) were in keeping with findings from much larger samples.[11-13] Many of the "accidental" deaths could have been suicide or murder.

Suggestive differences between the addicts who died and those who survived were that only 17% of the dead vs 28% of the living were above average intelligence. Thirteen percent of the dead vs 4% of the living were below average intelligence. Twice as many of the dead tended to live with a female relative past the age of 30 and only half as many had served in the Armed Forces. (The samples are too small for meaningful tests of statistical significance.)

Table 3 suggests that, allowing for a shrinking sample, an average of 3% of surviving addicts became stably abstinent each year and about 1% died. Although only five men died before age 30, other larger samples suggest that this observed death rate is too low. During the first five years, especially among adolescent addicts, probably 2% die each year.[11,12] Certainly, Table 3 suggests that stable abstinence can be achieved at any point in an addict's career. Similarly, Table 4 suggests that addicts do not tend to become abstinent at a given age. The peak of abstinences occurring around age 30 may be an artifact of the time period in these men's lives during which the study was conducted.

The 25 men actively addicted for 20 years were compared with the 35 men who by 1970 had achieved the most stable abstinence. Most of the variables that affected the addicts' prognosis 12 years after their Lexington hospitalization[10] were no longer important. Table 5 suggests that the number of years of addiction and the amount of drugs used *before* Lexington did not affect prognosis. Indeed, whether an addict had been addicted for one year or ten years did not appear to affect the odds that he would become abstinent over the next five years (Table 3). Whether an addict rapidly relapsed after first hospitalization or whether he had sought admission voluntarily did not affect prognosis. Education, race, and severity of delinquency also failed to identify addicts who would recover.

However, three variables continued to differentiate the best and worst outcomes. Prior to first hospital admission, 43% of good outcomes were employed four years or more; this was true of only 12% of the chronically addicted ($P<.01$). Only 24% of the chronically addicted, as compared to 46% of the stable abstinences, were raised in the same culture in which their parents had been raised. Thirty-two percent of the bad outcomes, as opposed to only 11% of the good outcomes, probably never married. Such data support the hypothesis that chronic addiction is a substitute for stable human relationships.

In the previous 12-year follow-up, it seemed clear that either voluntary hospitalization or imprisonment alone were useless in producing abstinence (Table 6). However, 12 or more months of parole supervision following nine months or more of imprisonment (referred to in Table 6 as *prison and parole*), was surprisingly effective. During the 12th to 18th years after first hospitalization, 91 voluntary hospitalizations and 84 short imprisonments resulted in more than a year of abstinence in only five cases. Four addicts who received close community supervision (via pa-

role) all achieved reported abstinences of at least a year.

During the years 1964 to 1970, New York saw the introduction of self-help groups and of methadone maintenance programs. Since in 1964 roughly 40% of the sample was still addicted, it was possible to compare the effects of these newer treatments on the sample. Unfortunately, only one man was known to have been admitted to a self-help house; thus, the effectiveness of that mode of treatment on this sample cannot be judged.

Fifteen addicts were known to have been admitted to methadone maintenance programs, some more than once. Thus, more than a third of the men in the sample who remained actively addicted in 1964 were known to have been reached by methadone programs. Of these 15 men, five men were clear failures. (None of these men had been concurrently under probation or parole supervision). For at least 18 months and an average of three years, the other ten men (67%) have been treatment successes (ie, not abusing other drugs and remaining in the program). Of these ten successes, four were also under probation or parole. All four of these men are working and have been abstinent from heroin for an average of four years each. Of the other six methadone successes, who were not under supervision, only one is working. The sample is very small, but it suggests that the efficacy of methadone maintenance may be facilitated by supervision.

In general, the addicts in this study had extremely poor work records. Excluding the 23 addicts who died and the 27 (with generally good work records) who had sustained their previously reported abstinence,[10] there were 50 addicts remaining. Thirty-six of these men (72%) had valid social security numbers known to this study. For the first eight years after their first discharge from Lexington, only one man worked regularly and seven more worked at least half time. During the next eight years seven worked regularly and one more worked at least half time. During the most recent four-year period, four have worked regularly and five to seven more worked half time. Those presumed abstinent had work records almost as spotty as those who were repeatedly reported addicted.

A final finding was that incapacitating mental illness was not a major risk among these addicts.[13] In 20 years, 10% of the addicts were known to have had brief psychiatric hospitalization for reasons other than drug addiction. Only four men were diagnosed psychotic. None of the hospitalizations were for more than a few months.

Comments

The natural history of narcotic addicts in general, which has been extensively reviewed elsewhere,[13-16] does not conform with the recent pessimistic report by the Editors of *Consumer Reports*.[1] My findings and those of Robins and Murphy[14] suggest that urban heroin addicts who achieve more than three years of abstinence can usually maintain this abstinence indefinitely. Only further follow-up studies of other addict samples will reconcile findings from the study of urban addicts with those of O'Donnell for rural addicts[15] which suggests that relapse after prolonged abstinence is not uncommon.

This study contains two serious methodological defects. First, since the point of this study was to follow addicts past age 40, these middle-aged addicts may appear out of date to the staff of contemporary clinics. However, I believe that at age 20, the study's addicts could not have been easily distinguished from their 1970 counterparts—Vietnam addicts excepted.

Second, data derived from institutional records are inferior to using repeated urine testing and interviews; but since no other 20-year studies of urban addicts exist, half a loaf seems better than none. There is also evidence that careful institutional record searches provide fairly reliable information—especially if the time base is measured in years. The 12-year follow-up of this same sample,[10] which did document abstinence by interview and by work history, found solid evidence that men without such documented abstinence were either dead or continued to appear in the records of *either* the police or of some helping agency at least once a year. Most active addicts leave multiple institutional footprints behind them. Substitution of incapacitating alcohol addiction for narcotics, of course, can only be ruled out by interview or by evidence of regular employment; but available evidence[10,14,15] suggests that incapacitating alcoholism, if not rare, is not the rule.

Nevertheless, it is also worth noting that more than *half* of the actively addicted men in this study were able to go for five years or more without being reported to the Federal Bureau of Narcotics and Dangerous Drugs. Over 25% of active addicts went for five years without being reported to the New York Narcotics Register. Thus, Winnick's thesis that addicts "mature out" at 40,[16] based solely on the files of the Federal Bureau of Narcotics, is almost certainly unrealistically optimistic. To track down addicts indirectly, multiple institutional sources must be used.

In this prospective follow-up, the data continue to support the efficacy of strict community supervision. For example, addicts who achieved stable abstinence received more than twice as many long imprisonments with parole as did the addicts who died; but the addicts who died received twice as many voluntary hospitalizations and twice as many short imprisonments as those who achieved stable abstinence. In other words, the addicts who were treated but not punished often died; the addicts who, due to felonies like selling drugs, were "punished" by parole tended to survive and to achieve stable community abstinence. Although this paradox deserves careful attention, the failure of long imprisonments *without* parole to affect abstinence points to the rehabilitative folly of mandatory sentences for addicts who sell drugs.

In reporting success after parole, the abstinence figures in this study are much higher than those reported for civil commitment. Both the California program of civil commitment and that of the New York Narcotic Control Commission have been criticized for producing sustained community abstinence in only about 20% of first admissions.[17] There are several possible explanations for the discrepancy. First, the present study describes only a small sample, and its method of data collection probably exaggerates the effectiveness of parole. Second, the shorter follow-up of civil commitment programs may lessen their apparent long-range effectiveness (eg, those who abscond for reasons other than relapse or who after readmission succeed, are scored as relapses). Third, the addicts in this

study who received parole were considerably older than the average addict in a civil commitment program. Age enhances the effectiveness of community supervision.[7,10] Fourth, the parole is sometimes more thorough and usually better enforced than the supervision provided by civil commitment programs. Lastly, the addict who feels oppressed by his parole officer can turn to other "good" agencies for help. Often, civil commitment may act to make all "helping" agencies appear oppressive.

However, earlier data from this follow-up has documented that addicts need far more than just compulsory supervision to achieve abstinence. Parole, like civil commitment, is not effective if the addict is not offered a replacement for the addiction.[4,5,10] The success of parole may depend as much on the fact that it usually requires the addict to get a job as it does on the fact that it tends to subject the addict to relatively close supervision. Employment may be a viable substitute for addiction.[17]

Finally, there is every indication that modern methadone maintenance programs, especially if supported with other therapeutic modalities, are superior to previous modes of treatment.[1,18] The ten addicts in this study who have achieved stable adjustment on methadone maintenance served as their own controls. All failed after both imprisonment and voluntary hospitalization. Indeed, the average previous treatment record for *each* methadone success was one long imprisonment, five short imprisonments, and nine voluntary hospitalizations–all followed by relapse within a year! Previously, two of the ten methadone successes had remained abstinent for a year on parole, only to relapse. None of the five methadone failures had ever responded to any form of treatment, including five exposures to imprisonment followed by a year or more of parole.

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