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# A 24-year Follow-up of California Narcotics Addicts

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## Abstract

This paper reports longitudinal patterns of narcotics use, other substance use, criminal involvement, morbidity, and mortality among 581 narcotics addicts followed for 24 years after their admission between 1962 and 1964 to the California Civil Addict Program. Data were obtained from admission records and two face-to-face interviews conducted in 1974/75 and 1985/86. The majority of this sample initiated narcotics use before age 20, and had a mean age at program admission of 25.4. In 1974/75, 13.8% of the sample had died and 28.6% tested negative for opiates. Corresponding rates in 1985/86 were 27.7% and 25.0%. Substance use and criminal involvement remained high among this sample into their late forties. The results suggest that the eventual cessation of narcotics use is a very slow process, unlikely to occur for some addicts, especially if they have not ceased use by their late thirties.

## Introduction

Illicit drug use is widely perceived as one of the chief social problems currently facing the nation.[1] Traditionally, major policy concern has been driven by the considerable evidence that has accumulated showing close connections between drug use and criminal involvement.[2,3] Recently, the importance of illicit drug use, especially by intravenous users, as a significant contributor to the nation's morbidity and mortality has achieved prominence.[4,5] More complete knowledge about the long-term patterns and consequences of illicit drug use (particularly narcotics use involving intravenous injection) is crucial in forming more effective prevention and treatment strategies.

The present study examines the long-term patterns and consequences of use among a sample of California narcotics addicts for over 20 years of their addiction careers. This sample represents admissions to treatment motivated primarily by coercion efforts of the criminal justice system. Information about the subjects' background and narcotics use history is available from admission records and two follow-up studies (conducted in 1974/75 and 1985/86) of 581 male addicts who initially entered drug treatment in 1962-64. The lengthy observation provided a unique opportunity to address drug-related issues that span an extended period of the life cycle. This paper reports the patterns of narcotics use over time, other substance use, criminal activities, and associated morbidity and mortality among these narcotics users.

## Methods

### Subjects

The sample consisted of 581 male narcotics addicts admitted to the California Civil Addict Program (CAP) during the period 1962 through 1964. The CAP, established in 1961 by California legislation, was a compulsory drug treatment program for narcotics-

dependent criminal offenders committed under court order. The program consisted of an inpatient period followed by supervised community aftercare. Patients could be returned for further inpatient stays if there was evidence of relapse to addiction or other behaviors that violated conditions of aftercare. This program was the only major publicly funded treatment available to California addicts during the 1960s, although in the 1970s methadone maintenance became commonly available. The sample, selected from the 1962-64 admission records, was first interviewed in 1974/75 as part of an evaluation of the CAP.[6] A second follow-up of this sample was conducted in 1985/86.

The intake information at admission included demographic background and illicit drug use history. The sample was limited to males because of the relatively small number of female commitments to the CAP. The sample consisted of white (36.5%), Hispanic (55.6%), and African-American (7.9%) addicts. Before age 18, more than 80% of the sample had been arrested and 80% had tried marijuana. More than 60% of the sample started using narcotics before age 20. Mean age at admission in 1962-64 was 25.4. Mean ages of living addicts who were interviewed at first and second follow-up were 36.8 and 47.6, respectively. The mean age at death for the total decedents was 40.2.

In 1974/75, 95% of the 581 clients were located (439 interviewed, 30 refused to be interviewed, and 80 were confirmed to be dead by death certificates). The 1985/86 study had a 94% location rate (354 interviewed, 31 refused or were too mentally dysfunctional to be interviewed, and 161--an additional 81 over the first follow-up study--were confirmed to be dead).

Interview Procedure

The two face-to-face interviews collected information on patterns of drug use and related questions covering successive periods of the addiction career from one year prior to first narcotics use to 1974/75 for the first interview, and from 1970 to 1985/86 for the

second interview. Each interview covered approximately 15 years, four years of which were overlapping for the two interviews. The database therefore was a result of combined retrospective and prospective studies. The interview protocol was adapted from Nurco et al.[7] Interview questionnaires were designed to obtain information on subjects' demographic characteristics, family history, personal drug use history, employment, and criminal behavior, as well as information on their legal status history (incarcerated, under legal supervision but not incarcerated, and unsupervised). Subjects were aware that the interviewer already knew their official history of criminal activity and legal status from information obtained independently from California criminal justice system records, and could verify their self-reports of criminal activity and legal status during the interview. Subjects were also given written assurances of confidentiality prior to each interview. Multiple measures were retrospectively recalled in a chronological sequence during the entire addiction career that covered, across the two interviews, from one year prior to first narcotics use to the time of the 1985/86 interview. The average interview at each followup point required between two and three hours to administer. At the end of each interview, a urine specimen was collected from those subjects not incarcerated. All participation, including the furnishing of urine samples, was completely voluntary.

The reliability and validity of the data have been thoroughly examined using the two face-to-face interviews conducted ten years apart and the results reported by Hser et al.[8] Briefly, the rates of congruence between self-reported current opiate use and urinalysis among those who provided a urine specimen was 73.7% at the first interview and 85.8% at the second interview. Test-retest reliability of self-report data during the four-year overlap period was investigated. Measures of narcotics use (including daily use and abstinence) were recalled with a test-retest correlation (Pearson correlation coefficients) range of .63 to .71. An overall correlation between two inter-variable correlation matrices containing forty-six variables, one obtained at each interview, was .90.

## Measures

The database contains admission and interview information, data from official record archives (e.g., criminal justice system, treatment records, and death certificates for those deceased), and urinalysis results (urine testing for illegal opiates). Relevant self-reported variables for the present analysis included background characteristics and health status. Substance-related (i.e., tobacco, alcohol, marijuana, cocaine, and narcotics) behavioral measures included ages of onset and current and past levels of use.

Narcotics addiction was defined as daily use for 30 or more consecutive days. Similarly, self-reported abstinence was defined as no use for 30 or more consecutive days. In between these two categories was a broad range of occasional use. Three measures assessing drinking problems were included. One measure was lifetime hospitalization for a drinking problem. The second was whether the client had been drunk on alcohol at least once in the seven days prior to each interview. The third was the mean percentage of time using alcohol heavily during the ten years prior to each interview point, where heavy alcohol use was defined as getting high on alcohol at least twice a week. Self-reported disability was elicited by a question about any physical disabilities that interfered with or prevented holding a job.

## Results

### Narcotics Use and Mortality at Each Interview Point

Status distributions at each of the two interview points are presented in Table 1. At the first follow-up interview in 1974/75, 80 (13.8%) of the sample were dead. The average age of the living addicts interviewed was 36.8 years. Only 28.6% of the total sample (or 37.8% of the interviewed sample) tested negative for opiates and 23.1% tested positive,

with an additional 6.2% refusing to provide a urine specimen and 17.7% being incarcerated; the latter two groups were not tested for drug use.

At the second follow-up interview in 1985/86, 27.7% had died and the average age of the living was 47.6. Only 25.0% of the total sample (or 41.0% of those interviewed) tested negative for opiates. The percentages of positive urine results, urine specimen refusals, and incarcerations were 19.4%, 4.8%, and 11.7%, respectively.

At both interviews, slightly over 50% of those interviewed were either using narcotics or were incarcerated, and changes of these rates between the two interviews were small. The most striking change was the increase in the mortality rate.

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Insert Table 1 about here

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Initiation, maintenance, and cessation of narcotics use

Because of the data collection techniques used, the entire addiction career can be displayed for this sample to examine the group's natural history evolution. The states of interest were: daily narcotics use, occasional use, abstinence, methadone maintenance treatment participation subsequent to CAP admission, criminal justice institutionalization periods, and death. The status of each client was determined for each year during the addiction career by comparing among the six states and choosing the one in which the client had been involved for the most months during each year. Percentages of the sample in each of these states during years between 1956 to 1986 (a period covering 30 years prior to the second interview) are presented in Figure 1.

Insert Figure 1 about here

The group's mean age of initiation to narcotics use was 18.9 years. The percentage of subjects in each status is represented by the vertical width of the horizontal bands. Because there were only two observation points of the subjects and their historical statuses were retrospectively constructed, subjects who were dead by the time of interview point contributed to a portion of the unknown status category in addition to those lost to follow-up. Except for death, individual subjects shifted among these statuses over time. Prior to the CAP admission in 1962-64, the group showed gradual increases in narcotics daily use and incarceration (the CAP inpatient period is counted as one type of incarceration). After 1965, incarceration rates started to decline, and both occasional narcotics use and abstinence increased. This pattern continued for the next ten years with noticeable changes including increased methadone maintenance treatment participation and deaths. After 1974/75, the group status seemed to become fairly stable; only death rates continued to grow.

Relapse, Cessation, and Mortality Patterns

To examine changes over time at the individual level, we grouped these addicts by their statuses at each interview point including inactive users (negative urine); active users (people who either urine tested positive or refused to test); incarcerated; dead; and lost to follow-up (where status was unknown). The status distribution at each interview point and the transition probabilities representing changes of status between the two interviews are shown in Table 2.

Insert Table 2 about here

The right-most column total and the bottom row total in Table 2 show the narcotics use status at the time of first and second interview, respectively (which duplicate, but also collapse, several categories of interview status described in Table 1). Probability values within the matrix indicate the likelihood of being in a particular status at the second interview given the status at the first interview. (These conditional probabilities are sometimes called transition probabilities.) Values in the dead column show that a person who was active in narcotics use in 1974/75, compared to those inactive users, had a slightly higher likelihood (.21 versus .16) of death by 1985/86.

The transition probabilities in Table 2 also show patterns of relapse and cessation between the two interview points. First, note that values in the diagonal of the matrix are consistently higher than others in the same row, indicating persistence in non-use, use, and incarceration status between the two interviews. Second, over the ten-year interval between interviews, the probability of relapse (i.e., transition from inactive to active states) is .29 and that of cessation (i.e., from active to inactive states) is .25.

## Antecedents and Correlates of Mortality and Active Status

We investigated risk factors that predict mortality in logistic regression analysis. We also examined potential antecedents and correlates with respect to the status of narcotics use of the 354 addicts who were alive and interviewed in 1985/86.

**Causes and Behavioral Correlates of Mortality.** Forty-six of the 161 deaths (28.6%) were from homicide, suicide, or accident. Fifty-two deaths (32.3%) were directly due to

drug overdose. The remainder (39.1%) were due to alcohol, were smoking-related, or due to other causes. We examined risk factors that were correlated with mortality.

The average age at death for decedents was 40.2. Among the 161 deceased addicts, 84 were not interviewed in the first interview study. These early decedents were significantly older than the rest of the group (e.g., their mean age at CAP admission was 28.0, compared to 25.0 for the rest of the group). Other information, especially mortality-related risk factors, was limited for these 84 addicts and they were excluded from the following analysis.

For the 439 addicts interviewed in 1974/75, logistic regression considering several risk factors for predicting mortality (77 deaths) by 1985/86 was conducted and results are presented in Table 3. Median split was used to dichotomize continuous variables. Among the factors considered, self-reported disability status showed the highest odds ratio for mortality (3.58, $p < .05$). The mean percentage of time using alcohol heavily, the mean number of arrests, and the level or amount of cigarette smoking also appeared to be marginally related to premature death ($p = .06$, .08, and .12 respectively).

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Insert Table 3 about here

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**Antecedents and correlates of active status.** Comparisons were made between two groups according to their narcotics use status (active/incarcerated versus inactive) at the 1985/86 interview. Addicts who were incarcerated were included in the active use group for the following reasons. Incarceration can be considered as a measure of detected criminal involvement and an indicator of a continued deviant life style. Incarceration-related abstinence does not reflect a choice to alter the drug-using lifestyle, and these

chronic addicts were likely to have been using narcotics prior to incarceration. Almost half of the incarcerations at each interview point were attributable to drug-related charges including drug possession, drug sales, and drug-related parole violations; another 30% were property crimes (including robbery, burglary, theft, and forgery), activities often committed to enable the procurement of drugs.[9] Furthermore, additional analyses not reported here showed no difference in the patterns reported below when incarceration was treated as a separate status category.

Examination of the two groups showed no differences between them in terms of years of education (10.4 vs. 10.0), socioeconomic level (2.6 vs. 2.5 on a 1 to 5 scale), and ages at first smoking (13.2 vs. 13.0), regular marijuana use (16.0 vs. 15.3), narcotics use (18.4 vs. 18.1), and first interview (36.0 vs. 36.6).

The health status, substance use, drug treatment participation, incarceration status, employment status at both interviews are listed in Table 4 for both active/incarcerated and inactive groups. Inactives did not differ from the actives in terms of disability, hepatitis, hospitalization rates for psychiatric problems and drug treatment participation. However, active narcotics users consistently reported higher rates of cigarette smoking, arrest and incarceration, and lower rates of alcohol use and employment at both 1974/75 and 1985/86 interviews (see Table 4). An interesting pattern is that active addicts seemed more likely to be cigarette smokers and inactive users seemed to drink more.

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Insert Table 4 about here

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Compared to the inactive group, the active addicts can be characterized overall by heavier smoking, more polydrug use (e.g., cocaine), heavier criminal involvement, and less

employment, although some inactives (i.e., those who tested negative for opiates) also reported recent cocaine use. Drug treatment participation, however, was low among both groups. Another noteworthy finding is that even though active users were aware and concerned about exposure to AIDS, many reported frequent engagement in needle sharing.

Prolonged cessation from narcotics addiction was also examined. One hundred and ten subjects (or 18.9% of the original sample) interviewed in 1985/86 reported complete abstinence for at least 3 years prior to the interview, and the corresponding number reporting no daily use was 212 (or 36.5% of the original sample). The mean years of abstinence up to the 1985/86 interview for the total 354 interviewed was 3.8 years, and for the 145 inactives was 6.8 years.

## Discussion

Although the present sample was selected from a corrections-based treatment program, patterns of narcotics-related natural history evolution of the sample did not seem to differ from those based on voluntary admissions to community-based treatment.[10,11] Furthermore, as is often noted, addicts rarely enter treatment solely on personal initiative and with the primary objective of becoming totally abstinent. This type of admission may constitute as little as 5% of the total addict population entering treatment.[12,13] Therefore, even though the present sample may not be fully representative of addicts admitted to community-based treatment programs in recent years, their patterns of narcotics use and related consequences still have important implications for the study of contemporary addiction. In particular, the unusually long follow-up period and comprehensive information collected in the present study allowed a rare examination of the dynamic changes that occurred over the natural history of narcotics addiction. Several issues that are particularly related to long-term relationships are discussed below.

**Eventual cessation of narcotics use**

Some past studies have suggested that an increasing proportion of addicts become abstinent with the passage of time.[11] Winick[14] suggested the "maturing-out" hypothesis to explain this phenomenon. Other studies have shown that heroin addiction tends to be chronically persistent and that most addicts repeatedly relapse.[15,16] The present study showed that although there were noticeable decreases in daily use and incarceration, and increases in abstinence after CAP admission up to the 1974/75 interview, the group showed little subsequent treatment involvement and essentially no status changes thereafter (see Figure 1). Overall, patterns of narcotics use were stable during the last ten years of the entire follow-up period: 10 to 12% of the group reported themselves to use narcotics on a daily basis, 6 to 10% reportedly engaged in occasional use, and 20 to 22% reported abstinence. The only significant increase maintained over time was in the number of deaths. There were also no age differences found between addicts who were inactive versus those who were still active in 1985/86. Moreover, the urinalysis results have to be treated as conservative estimates of current use because intermittent--and even frequent--use may not have resulted in a positive urine at interview and thus actual recent use may well be underestimated. These results suggest that the permanent cessation of narcotics use--resulting in long-term abstinence--is not a common occurrence and use may chronically persist for those addicts who have not already ceased use by their late thirties.

On the other hand, the proportions of dependent use, or use on a daily basis, were stabilized, compared to pre-treatment levels, at relatively low levels after CAP admission, and only 7.2% of the sample reported current daily use at the 1985/86 interview. Some underreporting can be expected, but other than urine taken at interview, the study did not have corroborative evidence for the life-time daily use activities. The rates of daily use (as well as of abstinence) reported in the present analysis were lower than other similar follow-

up studies, mostly because the original sample size, as opposed to only those alive, was used as the calculation base.

Comparisons of the results of the present study with other follow-up studies are not straightforward because of different sources of data, different methods of data collection and classification, as well as different follow-up periods. Consistent with most other studies[15,16] are the findings of a cyclical pattern of treatment, abstinence, and relapse in the natural history of addiction. Other findings that resulted from previous studies were high mortality rates, extensive involvement with the criminal justice system, and use of other substances such as alcohol and cocaine.

Treatment effectiveness has not been a focus of the paper and was not examined in the present analysis. However, prior evaluations[6,17] have confirmed that the CAP program appreciably reduced drug use and related crime among the sample. The present analysis showed that later participation in community-based treatment programs by this sample occurred at very low levels. The most common programs utilized involved methadone maintenance, but the participation rates were less than 10% of the sample in any given year during the ten years prior to the 1985/86 interview.

The literature on treatment evaluation has consistently demonstrated effectiveness,[18] but because of the chronically relapsing nature of narcotics addiction, treatment often produced only incremental improvement over extended time periods, and outcomes are directly related to treatment duration. The general lack of treatment participation and the short-term duration when participating may explain the persistence of the narcotics addiction careers observed in the present sample. Some unmeasured factors, such as antisocial personality disorder and other psychiatric comorbidity, are suspected to be high among this sample. Such conditions would likely have also contributed to the narcotics use patterns observed.

**Risk factors predicting early mortality**

The sample showed high overall lifetime and current rates of disability, hepatitis, excessive drinking, cigarette smoking, marijuana use, and other drug use problems. Historical rates of smoking, disability, narcotics use, drinking problems, and number of arrests were all higher among those addicts found dead at the second interview than those found alive. The present analysis also showed that, with other risk information lacking, deaths that occurred in the first ten years of the follow-up period were significantly associated with older age. However, during the second ten years of follow-up, age was no longer a significant indicator of early death. Instead, disability, long periods of heavy alcohol use, heavy criminal involvement, and tobacco use were among the strongest correlates of mortality.

Length of narcotics addiction did not predict early mortality probably because almost all had extensive addiction careers, so that there was not enough variation in the sample to show an effect. The overall high mortality rates and the many overdose deaths provide evidence of the severe consequences of narcotics use and, perhaps, the interactive effects resulting from the multiple substance use commonly found among narcotics users.

**Narcotics cessation correlates**

Addicts who became inactive users by 1985/86 had indicated at the time of the 1974/75 interview that they had less involvement with the criminal justice system, more employment, and less cigarette smoking but more drinking problems than the active addicts. This same set of variables continued to distinguish the two groups at the time of the 1985/86 interview, in addition to the differences in narcotics use and incarceration status that defined the groups. The increased use of marijuana and cocaine among these

narcotics users over time also suggests the increasing predilection for a narcotics-using lifestyle to involve multiple substances.

These findings, together with the severe mortality consequences associated with the various substances used, strongly suggest that an integrated intervention for multiple substance use is necessary to reduce the related negative consequences. The concept that treatment for other substance use should be integrated with treatment for narcotics use is not a new one. Recently, Henningfield et al.,[19] Carroll et al.,[20] and Battjes[21] have renewed with increased vigor the call to integrate the treatment for dependence on various substances. How to clinically best accomplish this (i.e., staging the abstinence of different substances) remains a challenge for future research.

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**Table 1. RESPONDENTS' STATUS AT THE TWO INTERVIEW POINTS**

| Status | 1974/75 | | | 1985/86 | | |
|---|---|---|---|---|---|---|
| | N | % of total | % of living & interviewed | N | % of total | % of living & interviewed |
| INACTIVE USE | | | | | | |
| *Urine negative for opiates* | 166 | 28.6 | 37.8 | 145 | 25.0 | 41.0 |
| ACTIVE USE | | | | | | |
| *Urine positive for opiates* | 134 | 23.1 | 30.5 | 113 | 19.4 | 31.9 |
| *Refused to provide urine* | 36 | 6.2 | 8.2 | 28 | 4.8 | 7.9 |
| INCARCERATED | 103 | 17.7 | 23.5 | 68 | 11.7 | 19.2 |
| DEAD | 80 | 13.8 | | 161 | 27.7 | |
| NOT INTERVIEWED | 62 | 10.7 | | 66 | 11.4 | |
| **TOTAL** | 581 | 100.0 | | 581 | 100.0 | |

Table 2. **TRANSITION PROBABILITIES BETWEEN TWO INTERVIEW POINTS IN TERMS OF PATTERNS OF NARCOTICS USE (NUMBER OF SUBJECTS IN PARENTHESES)**

| | | At 1985/86 Interview point | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | *Inactive use* | *Active use* | *Incarcerated* | *Dead* | *Unknown* | *N of each 74/75 group* | *Proportion of total* | *Proportion excluding death* |
| At 1974/75 Interview point | *Inactive use* | **.41** | .29 | .07 | .16 | .08 | (166) | .29 | .33 |
| | *Active use* | .25 | **.35** | .10 | .21 | .08 | (170) | .29 | .34 |
| | *Incarcerated* | .22 | .22 | **.34** | .14 | .07 | (103) | .18 | .21 |
| | *Dead* | .00 | .00 | .00 | **1.0** | .00 | (80) | .14 | N/A |
| | *Unknown* | .21 | .26 | .00 | .00 | **.53** | (62) | .11 | .12 |
| *N of each 85/86 group* | | (145) | (141) | (68) | (161) | (66) | (581) | | |
| *Proportion of total* | | .25 | .24 | .12 | .28 | .11 | 1.0 | | |
| *Proportion excluding death* | | .35 | .34 | .16 | N/A | .16 | | | |

Inactive use = not using narcotics (evidenced by negative urine testing results)
Active use = using narcotics (positive urine test or refused to test)

**Table 3. LOGISTIC REGRESSION ANALYSIS ON MORTALITY**
**(including 439 clients interviewed in 1974/75, among them 77 died by 1985/86)**

| Predictor | | Frequency/ Mean | Percentage Dead | Adjusted odds ratio (95% C. I.) |
|---|---|---|---|---|
| *Race* | White | 140 | 15.0 | 1.38 (0.41 , 4.70) |
| | Hispanic | 248 | 20.2 | 2.11 (0.67 , 6.66) |
| | African-American | 32 | 12.5 | 1.00 |
| *Age first interviewed at 1974/75* | < 35 | 207 | 15.5 | 1.00 |
| | > = 35 | 213 | 20.2 | 1.23 (0.70 , 2.19) |
| *Disability status at 1974/75 interview* | no | 378 | 15.3 | 1.00 |
| | yes | 42 | 40.5 | 3.58 (1.77 , 7.23) |
| *Number of packs smoked/day at 1974/75 interview* | < = 0.75 | 165 | 13.9 | 1.00 |
| | > 0.75 | 255 | 20.4 | 1.58 (0.89 , 2.83) |
| *Mean percentage of time using alcohol heavily prior to 1974/75 interview* | < = 12 | 213 | 14.1 | 1.00 |
| | > 12 | 207 | 21.7 | 1.69 (0.97 , 2.91) |
| *Active status * at 1974/75 interview* | no | 154 | 16.2 | 1.00 |
| | yes | 266 | 18.8 | 1.32 (0.75 , 2.35) |
| *Years of addiction prior to 1974/75 interview* | < = 11.75 | 211 | 16.6 | 1.00 |
| | > 11.75 | 209 | 19.1 | 0.84 (0.47 , 1.50) |
| *Mean number of arrests prior to 1974/75 interview* | < = 20 | 214 | 14.0 | 1.00 |
| | > 20 | 206 | 21.8 | 1.66 (0.94 , 2.92) |

*** In active status, the "no" category corresponds to negative urine results and "yes" includes all other conditions.**

**Table 4. CHARACTERISTICS AND STATUS AT 1985/86 INTERVIEW AMONG LIVING ADDICTS (N=354)**

| *Status at 1985/86* | Inactive Use (N = 145) | | Active Use/Incarcerated (N = 209) | | *Statistical Test* |
|---|---|---|---|---|---|
| **AT 1974/75 INTERVIEW** | **N or mean** | **%** | **N or mean** | **%** | **p <= .05** |
| **Health Status** | | | | | |
| *Disability* | 9 | (6.7) | 15 | (7.7) | |
| *Hepatitis* | 27 | (20.1) | 54 | (27.8) | |
| **Substance Use Status** | | | | | |
| *Current tobacco use* | 102 | (76.1) | 167 | (86.1) | .02* |
| *Number of packs smoked/ day/smoker* | 1.10 | | 1 | | |
| *Drunk on alcohol in past 7 days* | 17 | (12.7) | 31 | (16.0) | |
| *Ever hospitalized for drinking* | 18 | (13.4) | 13 | (6.7) | .04* |
| *Mean % of time using alcohol heavily* | 26.8 | | 21.7 | | |
| *Marijuana use in past month* | 54 | (40.3) | 67 | (34.5) | |
| *Urinalysis positive for opiates* | 34 | (25.4) | 63 | (32.5) | |
| *Urine refusal* | 9 | (6.7) | 14 | (7.2) | |
| **Incarceration Status** | 23 | (17.2) | 58 | (29.9) | .01* |
| **Mean Arrests per year since 18** | 0.99 | | 1.20 | | .00** |
| **Treatment since 1964/65 (months)** | | | | | |
| *Methadone maintenance* | 7.0 | | 7.8 | | |
| *Therapeutic Community* | 0.7 | | 0.7 | | |
| *Others++* | 1.6 | | 2.3 | | |
| **Current Employment** | 70 | (52.2) | 66 | (34.0) | .00** |
| **AT 1985/86 INTERVIEW** | | | | | |
| **Health Status** | | | | | |
| *Disability* | 36 | (24.8) | 47 | (22.5) | |
| *Hepatitis* | 39 | (26.9) | 67 | (32.2) | |
| *Psychiatric problems* | 18 | (12.4) | 17 | (8.2) | |
| **Substance Use Status** | | | | | |
| *Current tobacco use* | 93 | (64.1) | 171 | (81.8) | .00** |
| *Number of packs smoked/ day/smoker* | 0.99 | | 0.99 | | |
| *Drunk on alcohol in past 7 days* | 37 | (25.5) | 33 | (15.8) | .02* |
| *Ever hospitalized for drinking* | 29 | (20.0) | 24 | (11.5) | .03* |
| *Mean % of time using alcohol heavily* | 34 | | 22 | | .00* |
| *Marijuana use in past month* | 52 | (35.9) | 83 | (39.7) | |
| *Cocaine use in past month* | 17 | (11.7) | 47 | (22.5) | .01** |
| *Urinalysis positive for opiates* | 0 | (0.0) | 113 | (54.0) | N/A |
| *Urine refusal* | 0 | (0.0) | 28 | (13.4) | N/A |
| **Incarceration Status** | 0 | (0.0) | 68 | (32.5) | N/A |
| **Mean Arrests per year since 1974/75** | 0.29 | | 0.71 | | .00** |
| **Treatment since 1970 (months)** | | | | | |
| *Methadone maintenance* | 22.8 | | 27.4 | | |
| *Therapeutic Community* | 1.7 | | 2.2 | | |
| *Others++* | 4.7 | | 2.8 | | |
| **Current Employment** | 98 | (68.1) | 76 | (53.9) | .01* |
| **Mean Concern with Exposure to AIDS** | 0.74 | | 1.38 | | .00** |
| **Number of Times Shared Needles in Past 5 Years** | 21.81 | | 124.45 | | .00** |

Note: A t-test was applied when the dependent variable is continuous and a Chi-square test was used when the dependent variable is categorical. An * denotes significance at $p < .05$ and ** denotes significance at $p < .01$. Variables presented for descriptive purposes and not meaningful for such tests are denoted by N/A.

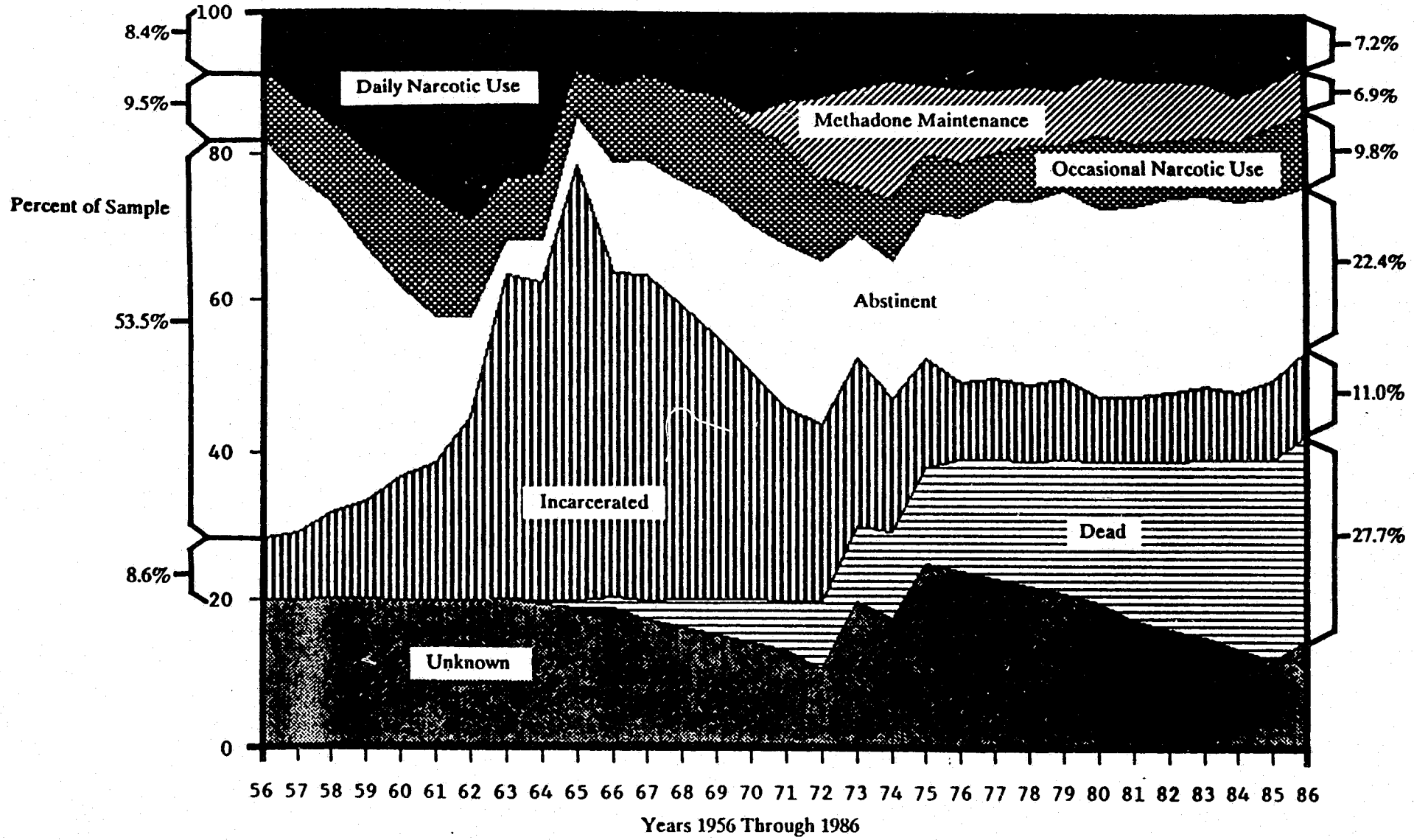


Figure 1. The Natural History of Narcotics Addiction ( Total N = 581)