

The Therapeutic Community: Success and Improvement Rates 5 Years after Treatment

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Abstract

Dropouts ($N = 162$) and graduates ($N = 75$) from the 1970-1971 residential population in Phoenix House were interviewed 5 years after treatment. Composite indices of criminality, drug use, and employment described client status on a four-point outcome scale. Success reflected absence of crime and drug use through all years of follow-up; improvement represented a positive change over pretreatment status. Graduate success and improvement rates were 75% and 93%, respectively. Among dropouts, the rates were 31% and 56%, respectively, but increased by time in program from < 1 month to > 20 months (Success = 0-57%; Improvement = 5-89%). Results at

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2-year follow-up were replicated in a 1974 cohort, providing convincing evidence for the effectiveness of treatment in the therapeutic community.

Success, in a traditional therapeutic community (TC) like Phoenix House, is a shorthand term describing an individual's change to a life-style that is drug-free, economically productive, and without antisocial behavior. This view of success, however, has not been reflected in drug treatment evaluations involving therapeutic communities.

The effectiveness of the TC has been assessed primarily through follow-up studies involving multiprogram or -modality comparisons. Fewer studies have been conducted on individual therapeutic communities. Recent reviews of this literature are contained in Bale (1979), Brook and Whitehead (1980), De Leon and Rosenthal (1979), and Sells (1979).

Evaluations usually examine multiple outcome variables (e.g., Bale et al., 1980; Burt et al., 1979; Nash, 1973; Sheffet et al., 1980; Simpson et al., 1978). In these, TCs reveal impressive reductions in criminality and drug use, and increased social productivity, which compare favorably with other modalities; and most studies show that the positive changes are directly related to time spent in treatment (e.g., Barr and Antes, 1981; De Leon and Andrews, 1978; De Leon et al., 1972; De Leon et al., 1979; Holland, 1978; Nash, 1973; Simpson et al., 1978).

Multiple measures of outcome, however, tend to obscure the association between treatment and the person. Averaged across clients, they depict changes in variables but mask the changes in individuals. Thus, some investigations have utilized composite measures of individual outcome or success on which therapeutic community results are comparatively favorable (e.g., Burt et al., 1979; Simpson et al., 1978). However, the accuracy and interpretation of results based upon these measures are clouded by several interrelated issues. These render unclear conclusions, particularly concerning the effectiveness of the TC.

First, modalities and programs differ in how they define success. This has resulted in composite measures that have not reflected the traditional TC's criteria for individual success. For example, methadone maintenance does not require abstinence but includes retention as a treatment goal. The latter often confounds success rates during and following program participation.

Similarly, temporal criteria have varied as to the stability of client status. Success status had been assessed on a yearly basis, percentage of time followed up, or for a brief 2-month period prior to a follow-up interview; and follow-up results have not distinguished between intermittent and continual successes.

In traditional TCs a prosocial life-style including abstinence is a requirement for remaining in residency and for completing the program. However, retention rates and success rates remain distinct. Treatment efficacy is validated if successful status is continually maintained after participation in the program.

Second, even within modalities with similar clinical criteria, program variability has restricted the relevance of conclusions for individual treatment settings (see, e.g., Nash, 1973; Sheffet et al., 1980; Winick, 1980). Documenting treatment effectiveness, therefore, requires a complementary strategy of single- and multiprogram evaluation. Although the generality of findings from single programs is limited by sample size and their unique boundaries, findings that repeat on different samples from the same treatment settings provide stable conclusions and permit interpretation of program differences.

Third, the concept of individual improvement has not been adequately clarified in drug treatment evaluation. For populations in mental health and social rehabilitation programs, improvement is the rule rather than the cure. This is especially germane to traditional therapeutic communities, whose criteria for success are conservative and whose long-term residency requirement decreases retention and completion rates. Many TC dropouts who are not judged clinical successes may reveal measurable improvement.

Only a few studies have examined composite measures of success or improvement in relation to length of stay in treatment (e.g., Barr and Antes, 1981; Brook and Whitehead, 1980; Burt et al., 1979; Chambers and Inciardi, 1975; Simpson et al., 1980). Results have varied, however, reflecting some of the above difficulties.

These issues shaped the scope and design of a 3-year research effort recently completed at Phoenix House, one of the largest traditional therapeutic communities. Client status at follow-up was assessed through agency records and self-report on multiple outcome variables, and with 60 scales measuring psychological adjustment. Results showed positive change in both domains (De Leon 1982; De Leon and Andrews, 1978; De Leon and Jainchill, 1981; De Leon et al., 1979).

This paper presents the self-reported social adjustment findings obtained with several composite indices of individual change. These were constructed from the multiple outcome variables and defined by traditional therapeutic community clinical criteria. Success and improvement rates are described in relation to time in program, and to strengthen conclusions concerning treatment effectiveness through replication, results were compared for two separate cohorts, followed 2 and 5 years posttreatment.

METHOD

Sample

Two cohorts ($N = 731$) were sampled for follow-up from the 1970-1971 and 1974-1975 residential populations of Phoenix House. Table 1 shows the 1970-1971 cohort ($N = 307$) consisted of dropouts ($N = 202$; males only) and

graduates ($N = 105$; males = 60 and females = 45), who were mainly 19-26 years of age, primary opioid abusers, and equally distributed by race. The dropouts were a 22% sample of the population of single-admission males randomly drawn from six time-in-program (TIP) bands (< 1 month and 4-6, 8-10, 12-14, 15-19, 20-26 months). The TIP-cell totals were approximately equal ($N = 32-37$), but represented varying percentages of the TIP proportions of single-admission males in the population. The graduates were a 27% sample of all those who completed the program in 1970-1971.

Table 2 shows the 1974 cohort ($N = 424$) consisted of male and female dropouts ($N = 371$) and graduates ($N = 53$), who were mainly male, Black, and 19-26 years of age. Almost 54% were primary opioid abusers, 14% were primary alcohol abusers, and 15% were primary marijuana abusers. About 12% were primarily involved with amphetamines or barbiturates (primary "other"), and 5% claimed no primary drug of abuse. The dropouts were a 38% sample of the entire residential population randomly drawn from six continuous time-in-program groups (< 1, 1-4, 5-8, 9-12, 13-16, and 17+ months). With the exception of the largest group (17+), each TIP cell was of similar size but represented a varying percentage of the TIP proportions of the residential population. Graduates ($N = 53$) were a 43% sample of those who completed the program in 1974-1977.

Both cohorts purposefully overrepresented the long-term dropouts to compensate for the decreasing proportion of clients who remain beyond 12 months. This bias tends to overestimate the absolute percentage of successes, but not the relationship between time in program and success or improvement.

Budget and time limits did not permit symmetrical sampling of dropouts and graduates by sex from either cohort, and there were other restrictions on the sample. Search and location time led to selection of clients with metropolitan addresses at admission, and proportions in the 1970 cohort were adjusted toward equal representation by race.

Nevertheless, with the exception of the slightly different time-in-program cells, the higher percentage of opioid abusers, and the absence of 1970-1971 female dropouts, the two cohorts were similar and representative of the Phoenix population from which they were drawn.

Client Location

An official system for tracking and locating was adapted from those utilized by other investigators; e.g., Chambers and Inciardi (1975), Nurco et al. (1975), and NORC for the Drug Abuse Reporting Program (DARP) sample (Sells et al., 1976). A detailed account of the system is provided in a previous report (De Leon, 1979). Only the main steps of the client-tracking procedure are

described here. (1) A mailing, consisting of addresses updated by five cooperating agencies, requested client phone contact. (2) Field tracking was initiated at the end of two mail cycles if the client did not respond. The field tracker (usually one of the interviewers) entered the old neighborhoods and made face-to-face inquiries as to the whereabouts of the client. (3) On contact, the purpose of the research was explained to the client, and an interview appointment was arranged.

Over 89% of the sample was located. Rates were significantly higher for the 1970-1971 dropouts and 1974 graduates (Tables 3 and 4). The 1970-1971 location rate for female graduates was spuriously low. Sampling this group was originally unplanned. Thus, their search time was undertaken late in the data-gathering phase of the project and terminated after only 3 months, compared with the 12-month search time for other clients. Within this short period, however, their location rates were exceptionally high.

That the 1970-1971 dropouts were easier to locate reflects a difference in cohort composition. The 1974 dropouts included more transient clients, for whom community ties or addresses were less stable.

In both cohorts, Hispanic dropouts were somewhat more difficult to locate and provided fewer completed follow-up interviews. Some possible reasons are: (1) Hispanic neighborhoods were altered because of demolition, resulting in loss of original housing; (2) an undetermined number of Hispanics returned to Puerto Rico; and (3) there was perceptible mistrust among neighbors and relatives concerning the interviewer's business with the clients.

Dispositions

A total of 525 clients (71.8% of the original sample) provided a completed interview, which included administration of the psychological battery. Twelve clients provided some of their data by mail and phone.

Tables 3 and 4 summarize the dispositions for the two cohorts. When corrected for percentages of those who were deceased or who refused to participate, the completed interview rate for the 1970-1971 clients was 84% (85.3% of all dropouts and 81.5% of all graduates). For the 1974 clients, the completed interview rate was 75% (72.3% of all dropouts and 96.0% of all graduates). Except for race, differences between the interviewed and un interviewed clients did not exceed 12%; nor did the interviewed or un interviewed clients differ from the populations sampled. Overall then, the interviewed clients do not appear to be a unique group reflecting sampling or location bias. Conclusions based upon their findings, however, must be tentatively generalized to the populations from which they were drawn and to the un interviewed clients, since those interviewed may still differ on variables not yet surveyed.

Table 1

The 1970-1971 Sample and Population

	Interviewed						Uninterviewed						Sample totals		Population totals		
	Dropouts		Graduates		Totals		Dropouts		Graduates		Totals		N	% ^a	N	% ^a	
	N	% ^a	N	% ^a	N	% ^a	N	% ^a	N	% ^a	N	% ^a					
Totals	162	68.4	75	31.6	237	100.0	40	57.1	30	42.9	70	100.0	307	100.0	1,151	100.0	
Sex																	
Males	162	100.0	46	61.3	208	87.8	40	100.0	14	46.7	54	77.1	262	85.3	794	69.0	
Females	0	0.0	29	38.7	29	12.2	0	0.0	16	53.3	16	22.9	45	14.7	357	31.0	
Race																	
Black	63	38.9	25	33.3	88	37.1	8	20.0	9	30.0	17	24.3	105	34.2	495	43.0	
White	43	26.5	19	25.3	62	26.2	22	55.0	13	43.3	35	50.0	97	31.6	253	22.0	
Hispanic	56	34.6	31	41.3	87	36.7	10	25.0	8	26.7	18	25.7	105	34.2	403	35.0	
Age ^b																	
<19	41	25.5	15	20.0	56	23.7	8	20.0	4	13.3	12	17.1	68	22.2	322	28.0	
19-26	97	60.2	35	46.7	132	55.9	28	70.0	14	46.7	42	60.0	174	56.9	576	50.0	
27+	23	14.3	25	33.3	48	20.3	4	10.0	12	40.0	16	22.9	64	20.9	253	22.0	

Primary drug used ^b																
Heroin/opioids	145	90.1	57	78.1	202	86.3	38	95.0	30	100.0	68	97.1	268	88.4	967	84.0
Nonopioids	16	9.9	16	21.9	32	13.7	2	5.0	-	-	2	2.9	35	11.6	184	16.0
Time-in-program (months)																
< 1	23	14.2	-	-	23	9.7	9	22.5	-	-	9	12.8	32	10.4 ^c	194	37.2
4-6	27	16.7	-	-	27	11.4	10	25.0	-	-	10	14.3	37	12.1	83	15.9
8-10	29	17.9	-	-	29	12.2	5	12.5	-	-	5	7.1	34	11.1	76	14.6
12-14	31	19.1	-	-	31	13.1	2	5.0	-	-	2	2.9	33	10.7	47	9.0
15-19	24	14.8	-	-	24	10.1	8	20.0	-	-	8	11.4	32	10.4	60	11.5
20-26	28	17.3	-	-	28	11.8	6	15.0	-	-	6	8.6	34	11.1	61	11.7
Graduate	-	-	75	100.0	75	31.7	-	-	30	100.0	30	42.9	105	34.2	-	-

^a Percent of each parameter; e.g., percent of dropouts. In this and all other tables, percents may not add to 100.0 due to rounding.

^b The *N* varies slightly because of missing data.

^c Six discrete TIP bands were identified in the entire population, which excluded clients outside of those bands. Thus, the total band *N* was 521, which was 57.8% of the total population. The population TIP percents, therefore, were based on *N* = 521. Also, the population total excluded the separate list of 1970-1971 graduates from which the graduate follow-up cohort was sampled.

Table 2

The 1974 Sample and Population

	Interviewed						Uninterviewed						Sample totals		Population totals				
	Dropouts		Graduates		Totals		Dropouts		Graduates		Totals		N	% ^a	N	% ^a	N ^b	% ^a	
	N	% ^a	N	% ^a	N	% ^a	N	% ^a	N	% ^a	N	% ^a							
Totals	240	83.3	48	16.7	288	100.0	131	96.3	5	3.7	136	100.0	424	100.0	1,239	100.0			
Sex																			
Males	178	74.2	36	75.0	214	74.3	112	85.5	5	100.0	117	86.0	331	78.1	985	79.5			
Females	62	25.8	12	25.0	74	25.7	19	14.5	0	0.0	19	14.0	93	21.9	254	20.5			
Race ^b																			
Black	170	70.8	27	57.5	197	68.6	70	53.4	3	60.0	73	53.7	270	63.8	730	58.9			
Hispanic	37	15.4	5	10.6	42	14.6	31	23.7	0	0.0	31	22.8	73	17.3	201	16.2			
White	33	13.8	15	31.9	48	16.7	30	22.9	2	40.0	32	23.5	80	18.9	298	24.1 ^c			
Age																			
< 19	43	17.9	14	29.2	57	19.8	27	20.6	0	0.0	27	19.9	84	19.8	286	23.1			
19-26	128	53.3	24	50.0	152	52.8	53	40.5	5	100.0	58	42.6	210	49.5	564	45.5			
27+	69	28.8	10	20.8	79	27.4	51	38.9	0	0.0	51	37.5	130	30.7	389	31.4			

Primary drug used ^b	128	53.6	25	52.0	153	53.3	68	51.9	2	40.0	70	51.5	223	52.7	526	42.5
Heroin/opioids	111	46.4	23	47.9	134	46.7	63	48.1	3	60.0	66	48.5	200	47.3	713	57.5
Nonopioids																
Time-in-program (months)																
<1	41	17.1	-	-	41	13.9	21	16.0	-	-	21	15.4	62	14.6	349	31.2
1-4	29	12.1	-	-	29	10.1	21	16.0	-	-	21	15.4	50	11.8	320	28.6
5-8	38	15.8	-	-	38	13.2	21	16.0	-	-	21	15.4	59	13.9	133	11.9 ^c
9-12	34	14.2	-	-	34	11.8	25	19.1	-	-	25	18.4	59	13.9	70	6.3
13-16	26	10.8	-	-	26	9.0	13	9.9	-	-	13	9.6	39	9.2	51	4.6
17+	72	30.0	-	-	72	25.3	30	23.0	-	-	30	22.1	102	24.1	194	17.4
Graduate	-	-	48	100.0	48	16.7	-	-	5	100.0	5	3.7	53	12.5	-	-

^aPercent of each parameter; e.g., percent of dropouts.

^bThe *N* varies because of missing data.

^cPercents do not add to 100.0 because 10 residents were classified as "other."

Table 3
The 1970-1971 Cohort Dispositions^a

	Dropouts ^b		Graduates ^c		Totals	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Completed interviews	162	80.2	75	71.4	237	77.2
Dead	5	2.5	3	2.9	8	2.6
Refused	7	3.5	10	9.5	17	5.5
Out of state	11	5.4	3	2.9	14	4.6
Jail	1	0.5	0	0.0	1	0.3
Fugitive	3	1.5	0	0.0	3	1.0
Other	0	0.0	3	2.9	3	1.0
Unlocated	13	6.4	11	10.5	24	7.8
Total	202	100.0	105	100.0	307	100.0
Completed interviews, corrected for dead and refused	162	85.3	75	81.5	237	84.0
Total uninterviewed, excluding dead and refused	28	14.7	17	18.5	45	16.0

^a Among those not interviewed ($N = 70$) some differences in disposition were found, particularly by sex and race: There were no deceased females; more females refused interview. Significantly fewer Blacks than Whites had no disposition; however, significantly more Whites and Hispanics refused interview. No graduate was a fugitive or found in jail, while 10% of the dropouts were fugitives or in jail.

^b Percent of 1970-1971 dropouts cohort.

^c Percent of 1970-1971 graduate cohort.

The Interview

There were three interviewers: one Black male who was a Phoenix House graduate, one White male graduate from another TC, and a White female who was an experienced interviewer drawn from outside the field of substance abuse.

Training of the interviewers in the use of the survey and administration of the psychological tests was conducted across three sessions through didactic instruction and mock interview. This was followed by a pilot phase in which field interviews were completed and individually reviewed by office staff, until five consecutively had been judged satisfactory. Thereafter, errors or "bad data" arising from interview ineptitude or from client distortion were minimized through routine supervisory examination of each completed interview. The competence of the interviewers is reflected in the fact that no completed interview was discarded. Ten percent had questionable data which were corrected by phone reinterview or deleted.

Table 4
The 1974 Cohort Dispositions^a

	Dropouts ^b		Graduates ^c		Totals	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Completed interviews	240	64.7	48	90.5	288	67.9
Dead	15	4.0	0	0.0	15	3.5
Refused	24	6.5	3	5.7	27	6.4
Out of state	14	3.8	1	1.9	15	3.5
Jail	8	2.2	0	0.0	8	1.9
Fugitive	12	3.2	0	0.0	12	2.8
Other	4	1.1	0	0.0	4	1.0
Unlocated	54	14.5	1	1.9	55	13.0
Total	371	100.0	53	100.0	424	100.0
Completed interviews, corrected for dead and refused	240	72.3	48	96.0	288	75.4
Total uninterviewed, excluding dead and refused	92	27.7	2	4.0	94	24.6

^a Among those not interviewed ($N = 136$), significantly more females than males refused interview, and more males were fugitive or in jail. Whites doubled non-Whites in the percentages classified as dead; significantly more Whites than Blacks or Hispanics were located or provided a disposition, while significantly more Hispanics were fugitives or in jail.

^b Percent of the 1974 dropouts cohort.

^c Percent of the 1974 graduate cohort.

All but 20 interviews were obtained within 600 miles of New York City; three were conducted in Europe and the remainder in various regions of the United States. The interview itself was conducted in a setting chosen by the client, usually the home or a Phoenix House facility. About 10% of the interviews were completed in jail or drug treatment settings. Initially, the client's identification was ascertained with signature check, social security number, and date of birth. The client then read the purpose of the study, consent forms, and releases, and signed the latter, after which the interview proceeded. This was a 4-hour session, although 30% required at least two sessions. At the end of the final session the client was paid \$15. Interviewers were paid \$30 for each verified interview.

The interview protocol consisted of a questionnaire that surveyed the social adjustment of the client before and after Phoenix House, and four standard paper-and-pencil tests (60 scales) that assessed psychological status. The survey consisted of 225 items, most of which were structured questions, binary or scaled ratings, that focused upon four main periods: (1) background: family,

social, personal, drug, employment, and criminal history in the years prior to Phoenix (lifetime); (2) pre-Phoenix: month-by-month tracing of life activities in the last year before entry into Phoenix; (3) the Phoenix experience: the client's expectation and perception of treatment itself, benefits, problems, significant influences, staff and peer relations, and reasons for termination; and (4) post-Phoenix: month-by-month tracing of life activities--e.g., drug use, drug and other treatments, criminality, employment, residential changes, and social and personal relations across all the years of follow-up.*

Program Criteria and Indices of Individual Change

Rehabilitation in Phoenix House involves an integration of social and psychological goals (see De Leon, 1981).† Although the latter are critical, success is defined by the social adjustment criteria that are required for program completion. These include:

1. Minimum residency of 18-24 months.
2. Abstinence from any substance use. Infrequent social drinking is permitted off-premises in the late reentry phase (beyond 18 months in residence), but only for clients whose primary substance is not alcohol. (Present policy [1981] has banned any drinking in the reentry stage of the program.)
3. Absence of antisocial behavior, which includes any illegal activity or violence to person or property.
4. At least 6 months with a full-time job, school attendance, or combinations of both.
5. A bank account of at least \$1,000 and evidence of independent living after the residential phase, either alone or with another graduate, a spouse, or sometimes with a girl/boyfriend. Return to the parental home is discouraged except for clients under 18.

*Items for the survey were drawn from several sources used in other research, at Phoenix and elsewhere. These included the Phoenix Resident History Questionnaire and the New York City Addiction Services (ASA) Questionnaire used in an earlier study of different modalities including Phoenix House (see Burt et al., 1979). Additional items were selected from CODAP (the intake survey employed by all federally funded treatment programs) and the survey used by the Drug Abuse Reporting Program (DARP).

†The psychological goals include clinically determined changes in attitudes (e.g., cooperation, positive regard for self and others) and values (e.g., honesty, self-reliance, and social responsibility), and improvement in interpersonal relationships, insight, and emotional control. Some of these changes are assessed in psychological results reported elsewhere (De Leon, 1982; De Leon and Jainchill, 1981).

After residency a client is viewed clinically as successful if s/he continually maintains prosocial behavior and abstinence from opioid use and/or a nonopioid primary drug. There are, however, some ambiguities concerning nonopioid use following treatment. For example, reduction (vs abstinence) in the use of a nonopioid primary drug is explicitly viewed as a continuing sign of maladjustment, but alcohol or marijuana use among former opioid and nonopioid abusers who do not claim these as primary drugs, remains an unresolved clinical and philosophical question.

Similarly, reentry into drug treatment must also be cautiously interpreted, particularly for TC clients who return to TCs or outpatient settings. Frequently, these modalities are selected for psychological or circumstantial assistance, not necessarily because the client has relapsed or regressed to serious drug use. Entry into detoxification or chemical treatment modalities offers more evidence for drug reinvolvement. However, some clients enter these modalities under other pressures, not infrequently the fear of relapse to illicit drug use. Thus, reentry into treatment is often viewed by clients and clinicians as a positive sign.

Indices of Change

These considerations entered into the construction of the composite indices. The latter were developed from 16 variables describing criminality, drug use, and employment, retrospectively traced month by month through all years of the study.

The Criminal Index (CrimDX). If there was at least one episode of criminal activity or at least a week spent in jail during any month of observation, the CrimDX was scored for the entire year and for all cumulative years.

The Drug Index (DrugDX). A DrugDX was scored if there was (1) any use of any opioid (heroin, methadone, Delaudid, or other opioid), irrespective of the client's primary drug pretreatment; (2) any use of the primary drug, opioid or nonopioid. For clients who claimed no primary drug pretreatment, a DrugDX was also scored if there was any use of glue, hallucinogens, or hypnotics; or weekly use of marijuana or alcohol; or use of other nonopioids singly or in combination, at least three times in 1 month. Again, a DrugDX in any month resulted in a DrugDX for the entire year and for all cumulative years.

The Employment Index (EmpDX). This is a three-point scale based upon actual employable months. The value is determined by the ratio of months of full employment (or weighted combinations of full- and part-time employment) to total employable months; i.e., all months excluding those in jail or, rarely, those involving non-drug-related disability. Thus:

EmpDX 2 = full employment, at least 50% of the employable time.

EmpDX 1 = full employment, 25-50% of the employable time.

EmpDX 0 = full employment, less than 25% of the employable time.

The Success Index. Weighted combinations of the CrimDX and DrugDX placed the client on a four-point scale of favorable status. Criminality was judged more negative than drug use in the rating. Employment, the EmpDX, was excluded from the four-point success index for empirical reasons. A 12-point index that included the EmpDX correlated above +0.90 with the four-point scale, indicating that the addition of the EmpDX did not significantly change the client's relative status. The four-point success index was defined as follows:

Success #4, Most Favorable Status: No occurrence of a CrimDx and no occurrence of a DrugDX through all months of observation.

Success #3, Favorable Status: No occurrence of a CrimDX through all months of observation, but at least one occurrence of a Drug DX.

Success #2, Unfavorable Status: No occurrence of a DrugDX through all months of observation, but at least one occurrence of a CrimDx.

Success #1, Most Unfavorable Status: At least one occurrence of both a CrimDx and a DrugDX, either separately or together, in any month of observation.

There are temporal requirements that entered in the Success Index. The lowest Success Index in any year was the index for all cumulative years, and a Best Success Index (#4) had to be maintained for all cumulative years. The latter requirement reflects the clinical view that intermittent success indicates cycles of maladjustment, implies unstable treatment effects, and considerably amplifies the problem of interpreting the specific influence of residential treatment on long-term outcome.

Reliability and Validity

Verification and corroboration of data included the following procedures: (1) reinterview of the client by phone, using 5% of the original questions, 2-10 days after initial interview; (2) a family corroboration interview (this was a 30-minute phone call by a special interviewer who obtained information about the client's life as seen by a parent, spouse, or relationship partner since the treatment years); (3) urine sampling (follow-up clients were requested to voluntarily provide samples of their urine at the end of the interview); (4) agency corroboration (client criminal activity and entry into drug treatment were independently assessed through New York State criminal justice and drug treatment agency records).

Complete reliability and validity studies are detailed in a later report. This section summarizes the results of these studies for the successful clients in each cohort. The reliability of the criminal and drug use variables that entered into the composite indices was examined through internal consistency. The concordance rates between self-reported drug use and self-reported drug treatment were 96% (1970) and 91% (1974); and between criminal engagement and other self-reported criminal variables, 92% (1970) and 98% (1974). The validity of self-reported drug use and criminality variables was checked through comparisons with urinalysis and agency records of drug treatment, arrests, conviction, and incarcerations. Noncorroboration (client underreporting) ranged from 10% to 30%, depending upon the comparison. Thus, among the successes, the internal consistency and validity of self-report was impressive for the separate outcome variables.

The impact of these reliability and validity checks on the success results can be assessed from the following: If all cases with discrepancies arising from internal inconsistency and noncorroboration are accepted as negative, success rates reduce by 12% (1970) and 11% (1974); if they are discarded as questionable data, success rates reduce by 7% (1970) and 8% (1974).

Neither of these adjustments altered the main findings of the study. Thus, with the exception of five cases that were reclassified, all discrepancies were retained as possible error in the results. This decision was based upon several considerations.

First, discrepancies between self- and agency reports are difficult to interpret. For example, ex-addicts with arrest histories may be rearrested and released, or may go to a trial that results in a dismissal. Even recorded convictions may be on minor or questionable charges, which do not reveal antisocial behavior of meaningful consequence (e.g., speeding or trespassing). Thus, clients may not report an arrest, and its appearance on their agency record may be misleading.

Similarly, urine testing and agency- or self-reported drug treatment are not easily interpreted. Positive and negative error rates in laboratory tests render questionable conclusions based upon a single urine sample, and (as described earlier) clients may view their time in drug treatment as a positive period of adjustment.

Second, discrepancies were accepted to conform with the follow-up literature in which success rates are described based upon self-reported data unadjusted for reliability and validity. Though constructed differently, the present indices include the same outcome variables utilized in other studies with composite measures. In these studies, corroboration rates for the separate outcome variables are similar to those obtained in the present sample (see, e.g., Burt et al., 1979; Simpson and Sells, 1981), although they do not adjust success rates as described above for the Best Success group.

Overall, then, the present results are reliable and valid. The absolute percentages of success rates may alter depending upon adjustment for internal consistency and corroboration. Within the limits of self-reported data, results must be viewed as estimates of the error-free, or "true," success rates. A more important caveat, however, is that the method of corroboration must be acknowledged in comparisons between the present success rates and those reported in other studies.

Other Methodological Considerations

1. Time-at-risk (TAR) was defined as time-out-of-program (TOP) minus months in jail. For example, some clients could be followed 5 years since leaving treatment, but their actual time on the street could be shorter if they spent any months in jail. Actually, during the 5-year follow-up period, mean time-in-jail for the entire sample was 2.6 months. Nevertheless, TAR entered into the construction of each index. Jail time was automatically scored as a CrimDX and was subtracted from employable months so that the EmpDX ratio was unaffected. Also, a DrugDX was scored if the client failed the drug use criteria while in jail. Time spent in drug treatment settings was considered a risk period for crime and illicit drug use, although some investigators have argued otherwise (e.g., Simpson and Sells, 1981).

The EmpDX was slightly affected by constraints of residential treatment. Clients in drug treatment, TCs or otherwise, were presumed to be available for work. However, traditional TCs like Phoenix House prohibit outside employment in the initial 6 months of residence. This value was not subtracted from employable months for the few clients located in TCs after Phoenix House.

2. Data obtained at admission for activities in the year prior to treatment were found to be highly correlated with the follow-up interview data. Thus, the pretreatment data taken at follow-up were used, since they provided more complete information uniformly obtained across the full sample. Still, the client's retrospective accounts of life changes are subject to some errors of distortion. However, these tended to be minimized through the 4-hour interview, during which the same events were retraced through questioning of different areas of social adjustment.

3. Admissions include clients who complete an intake evaluation form and remain at least 24 hours in residence. A first admission to Phoenix who left treatment for at least 30 days and returned is a multiple admission, and the total cumulative time spent in treatment through multiple admissions defined the client's total time-in-program (the 1974 cohort, since 1970 sampled single admissions only).

4. Prior to 1976 graduate status was conferred informally, often at some point after the client separated from the program in good standing. (Since 1976

graduation has been an annual ceremonial event in Phoenix House, for all residents who meet the program's criteria for completion.) In the present study, however, follow-up status was assessed from the official separation date for all clients. Dropouts, or splittees, are clients who leave treatment against clinical advice or without positive sanction by the clinical staff. Relatively few dropouts are expelled, particularly among the longer stayers. Most leave voluntarily, but irrespective of reasons for leaving, dropouts are not presumed to be clinically successful.

5. The primary statistical analyses evaluated change over time (pre- to post-treatment), with the sign test for correlated samples. The sign test excludes ties and only tests positive changes. However, to keep all data, the present analyses retained tied indices. For example, a pretreatment 0 CrimDX (no crime), or 0 DrugDX (no drug use), or Best EmpDX (> 50%) that didn't change posttreatment was counted as a positive change. Conversely, a pretreatment CrimDX 1 or DrugDX 1 that didn't change posttreatment was counted as a negative change, as was no change in any EmpDX (< 50%). For the Success Index, a pretreatment rank of 4 that remained 4 posttreatment was scored as a positive change. In contrast, success indices of 1, 2, or 3 that worsened or remained the same posttreatment were scored as a negative change. Thus, retaining ties suppressed statistical significance, since few cases had a Success Index of 4 prior to treatment.

Tests compared the single pretreatment year with cumulative posttreatment years. This strains statistical assumptions and biases against significance. While not shown, comparisons between pretreatment and separate posttreatment years were more consistently significant. Cumulative years were tested, however, since these reflect the TC's temporal criteria for maintaining favorable status.

Differences between groups were examined with several association statistics provided by the SPSS Crosstabs program (Nie et al., 1975). In the tables and figures, the *N* varies because of missing indices or insufficient TOP.

RESULTS

The results for the indices and success rates are detailed for the 1970 cohort, followed by comparisons with the 1974 cohort. Data for dropouts, graduates, and by time-in-program are presented separately; those for age, sex, race, and primary drug are briefly summarized. In the tables and figures, results are shown for 3 cumulative years, the minimum TOP for all dropouts, and for all years ($\bar{X} = 4.7$ yr). Graduate results are shown across 5 cumulative years, their minimum TOP, and for all years ($\bar{X} = 6.4$ yr).

Table 5
The Indices: Crime, Drug, and Employment at Follow-Up (%)

Totals, dropouts, and graduates														
	N	Pre	Post 1	p	Post 2, ^a		Post 3,		Post 4, ^b		Post 5, ^b		Post, all years	p
					cum.	p	cum.	p	cum.	p	cum.	p		
CrimDX														
Totals	226	96.5	29.2	***	35.0	***	37.2	***	-	-	-	-	42.0	***
Dropouts	154	97.4	40.9	***	48.7	-	51.6	-	-	-	-	-	57.1	-
Graduates	72	94.4	4.2	****	5.6	****	6.9	****	11.1	****	11.1	****	12.5	****
Dropout/graduate differences, <i>p</i> ^c		-	****		****		****		-	-	-	-	****	
DrugDX														
Totals	229	94.3	32.3	****	36.2	****	38.0	****	-	-	-	-	41.9	***
Dropouts	156	96.8	43.6	**	49.4	-	51.9	-	-	-	-	-	58.2	-
Graduates	73	89.0	8.2	****	8.2	****	8.2	****	11.0	****	12.3	****	12.3	****
Dropout/graduate differences, <i>p</i> ^c		-	****		****		****		-	-	-	-	****	
EmpDX > 50%														
Totals	230	32.6	75.7	****	74.8	****	76.3	****	-	-	-	-	76.1	****
Dropouts	156	36.5	66.0	****	64.1	****	66.2	****	-	-	-	-	68.4	****

Graduates Dropout/graduate differences, <i>p</i> ^c	74	24.3	95.9	****	97.3	****	97.3	****	97.3	****	95.9	****	91.9	****
EmpDX 25-50%	*		****		****		****		****				****	
Totals	230	9.1	4.8		8.7		8.8		8.8				10.2	
Dropouts	156	9.0	6.4		12.8		13.0		13.0				12.5	
Graduates	74	9.5	1.4		0.0		0.0		0.0		1.4		5.4	
EmpDX < 25%														
Totals	230	58.3	19.6		16.5		14.9		14.9				13.7	
Dropouts	156	54.5	27.6		23.1		20.8		20.8				19.1	
Graduates	74	66.2	2.7		2.7		2.7		2.7		2.7		2.7	

^a Posttreatment years are cumulative; e.g., Post 2, cum. = years 1 + 2 posttreatment. The sign test for correlated samples was applied to number of positive changes from pre- to posttreatment years. The lack of significance of the CrimDX and DrugDX among dropouts in part reflects the test bias involving cumulative years. Significance is consistently achieved when the pretreatment year is tested against individual posttreatment years. Unlike the CrimDX and DrugDX, EmpDX > 50% increases through cumulative years, as actual months employed accumulate relative to the total employable time. Thus, statistical significance is more easily obtained with this measure.

^b Because a large number of dropouts had insufficient time out-of-program to be followed 4 and 5 cumulative years, percentages for dropouts and totals are excluded after Post 3, cum. years.

^c Chi-square probabilities. Tests were applied only to > 50% results on the EmpDX.

* *p* < .10; ** *p* < .05; *** *p* < .01; **** *p* < .001.

The CrimDX, DrugDX, and EmpDX

Table 5 shows that in the year prior to entry into Phoenix, over 94% of the graduates had a CrimDX, and 89% had a DrugDX, while only 24% were employed more than 50% of the time (EmpDX > 50%). Across all years of follow-up, the proportions with a CrimDX and DrugDX decreased to less than 13%, and 92% had an EmpDX > 50%. These posttreatment changes were statistically significant for each index.

Among dropouts, similar but smaller changes were obtained on the three indices. In the year before treatment, approximately 97% of the dropouts had a CrimDX and a DrugDX, and about 37% worked more than 50% of the time. Across all years of follow-up, the proportions with a CrimDX and DrugDX decreased by nearly half, while 68% had an EmpDX > 50%. Only the posttreatment increase on the EmpDX achieved statistical significance.

Comparisons between graduates and dropouts revealed no significant pretreatment differences in the CrimDX and DrugDX, but significantly fewer graduates were employed more than 50% of the time. Across all years of follow-up, however, graduates were statistically better than dropouts in each index (Table 5). The stability of the three indices through the follow-up years is evident. For both dropouts and graduates, changes were maximal in the first posttreatment year, and they were maintained throughout the entire period of follow-up. The differences between year 1 and all years did not exceed 17% on any index.

Generally, the positive changes in follow-up were similar by age, sex, race, and primary drug. On the three indices, there were only scattered differences that reached significance. Among graduates, prior to treatment CrimDX and DrugDX increased with age, and few clients > 27 obtained an EmpDX > 50%; also, more males obtained a CrimDX, while more females had a DrugDX. In follow-up, CrimDX decreased with age, more females yielded a CrimDX, and more males had an EmpDX > 50%; and more clients > 27 obtained a DrugDX. Among the all-male dropouts, more Whites obtained a DrugDX pre- and posttreatment; in follow-up the EmpDX > 50% related positively to age. Opioid abusers, who constituted almost 87% of the cohort, yielded a greater percentage of CrimDX pretreatment and had larger reductions in CrimDX and DrugDX posttreatment.

Figure 1 shows that time-in-program (TIP) related to the posttreatment changes. Prior to treatment there were no TIP differences on any index. During follow-up all TIP groups, except for the < 1-month clients, showed decreases in the CrimDX and DrugDX. However, these reductions increased directly with length of stay in treatment, reaching statistical significance among the longest-staying dropouts. The percentages of EmpDX > 50% also increased but more uniformly across time-in-program groups.

Success and Improvement Rates

Table 6 shows that 83% of the graduates had the lowest Success Index (#1) prior to treatment. In post year 1, 90% of the graduates were Best Successes, which declined to 87% across 3 cumulative years. Almost 75% of the graduates remained successful through all years of follow-up.

Among dropouts, similar but smaller changes were obtained. Prior to treatment, almost 95% of the dropouts had the lowest Success Index. In post year 1, over 45% of the dropouts were Best Successes, which declined to 34% across 3 cumulative years; and 31% of the dropouts remained successful through all years of follow-up.

The actual proportion of individuals who changed is more clearly shown when absolute status is ignored. Table 7 summarizes the proportion of positive changes from the pretreatment index (improvement). For graduates, 93% maintained positive change through all years of follow-up. Among dropouts, at 1-year follow-up, over 69% had positively changed. Through 3 cumulative years, 61% maintained this positive change, as did 56% through all years of follow-up. Actual change, then, was considerable, generally reflecting shifts from the lowest pretreatment category.

Sex and race did not statistically relate to success or improvement rates. However, success rates were significantly lower among dropouts < 27 and among all graduate nonopioid abusers.

Figure 2 shows that among dropouts, there is an orderly relationship between success status and time-in-program. Across all follow-up years, Best Success rates are zero among the < 1-month dropouts, 12% in the 4-6-month TIP group, 32% in the 8-10-month group, 38% in the 12-14-month group, 29% in the 15-19-month group, and 57% in the 20-26-month TIP group. Success Indices 2 and 3 remain uniform, but Index 1 declines sharply by time-in-program. Thus, the increase in Best Success (#4) by TIP relates to the decrease in the least favorable category (#1).

Figure 3 shows that improvement rates are systematically related to time-in-program. Percentages of improvement ranged from 5% in the < 1-month dropouts to over 89% in the longest-staying dropouts, and was 93% among the graduates.

Figure 4 depicts the stability of success rates through the follow-up years. The graduate rate more than doubled that of dropouts in all years of follow-up. Among both, however, success rates in year 1 declined by less than 15% through all years of follow-up; that is, about 85% of those who were successful in year 1 remained successful throughout follow-up.

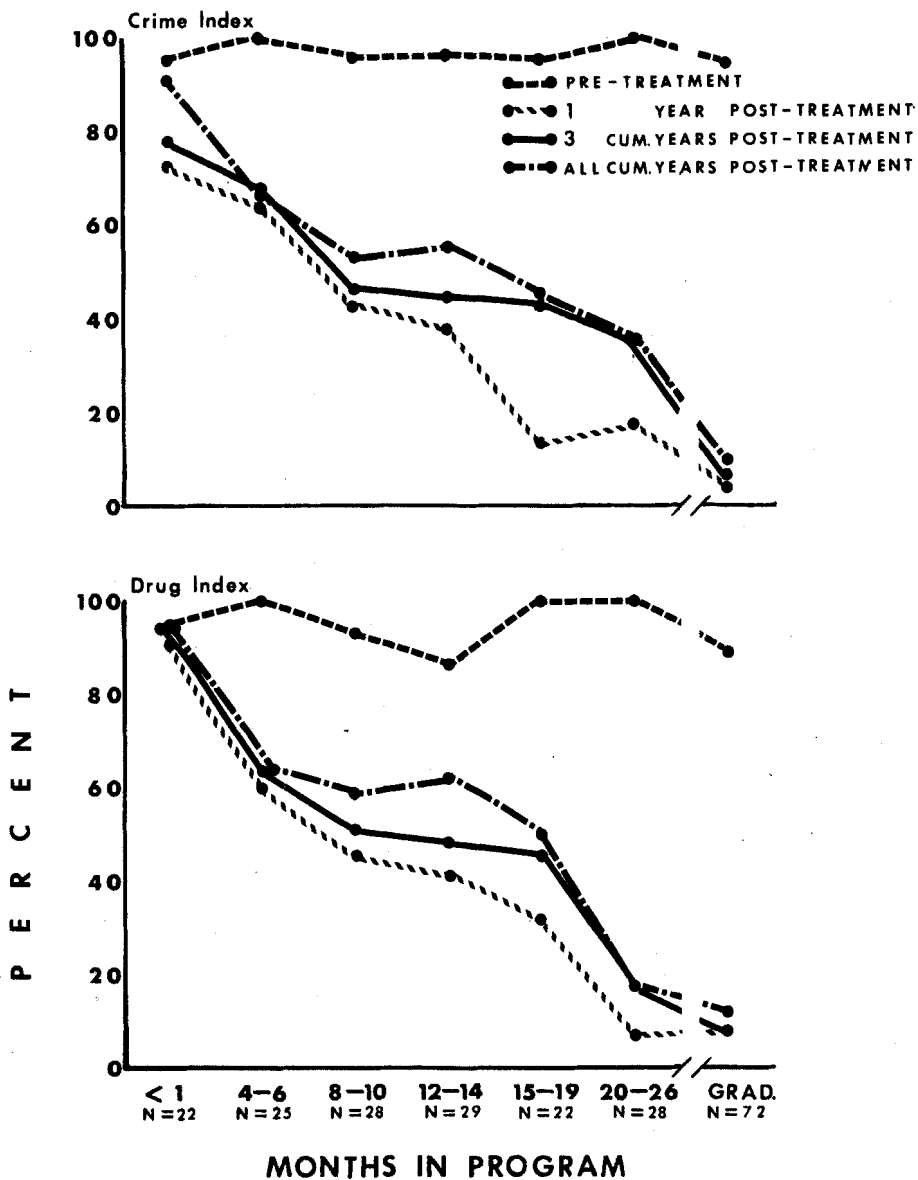


Fig. 1. The three indices of outcome—criminality, opioid or primary drug use, and employment—in relation to time-in-program (TIP) for the year prior to treatment and all years posttreatment.

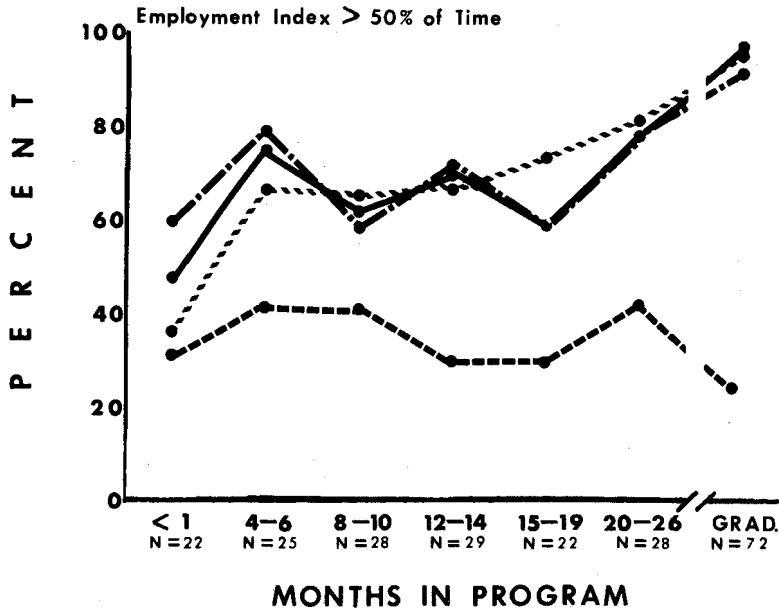


Fig. 1. (continued)

This finding is particularly impressive in view of the criterion requiring continued successful status. By definition, then, success rates had to be maximal in year 1 and could only remain constant or decrease through cumulative years.

However, the same criterion obscured the fact that a number of clients were intermittent or eventual successes. For example, when a yearly status is examined, 58% of all dropouts were successful in the last year before interview vs 45% in post year 1 and 31% through all years.

Most of the increase in the last year occurred in the < 12-month dropouts. This is expected since their initial base of nonsuccesses was considerably greater than that of the > 12-month dropouts. However, despite this rise in shorter-term successes, the time-in-program function remained stable in the last year of follow-up. Success in post year 1, therefore, was an excellent predictor of long-term success. Most of the year-1 successes maintained their status throughout follow-up. However, when the criterion of continued status is ignored, a substantial number of others were successful in the last follow-up year.

Comparisons with the 1974 Cohort

This analysis compared the success and improvement rates between the 1970 and 1974 dropouts, graduates, and time-in-program groups. The two cohorts differed by sex and primary drug. The 1974 dropouts consisted of

Table 6

Success Index at Follow-Up: 1970-1971 Cohort (%)

Success Index	Pre	Post 1	Post 2, cum.	Post 3, cum.	Post 4, cum.	Post 5, cum.	Post, all years cum. ^a
Totals ($N = 221$)							
4	0.9	59.7	53.8	51.4	-	-	44.8
3	2.7	10.9	10.9	10.9	-	-	10.8
2	5.4	7.7	9.5	10.4	-	-	12.7
1	91.0	21.7	25.8	27.3	-	-	31.7
Positive change ^b		****	****	****	-	-	****
Dropouts ($N = 150$)							
4	1.3	45.3	37.3	34.2	-	-	30.7
3	1.3	13.3	13.3	13.4	-	-	12.0
2	2.7	10.7	12.7	13.4	-	-	13.3
1	94.7	30.7	36.7	38.9	-	-	44.0
Positive change ^b		****	****	****	-	-	****
Graduates ($N = 71$)							
4	0.0	90.1	88.7	87.3	83.1	81.7	74.6
3	5.6	5.6	5.6	5.6	5.6	7.0	8.5
2	11.3	1.4	2.8	4.2	5.6	5.6	11.3
1	83.1	2.8	2.8	2.8	5.6	5.6	5.6
Positive change ^b		****	****	****	****	****	****
Dropout/graduate differences ^c	**	****	****	****	-	-	****

^a Dropouts, $\bar{X} = 4.67$ years; graduates, $\bar{X} = 6.4$ years.

^b The sign test for correlated samples was applied to number of positive changes from pre- to post- cumulative years. $N = 221$ because of missing index or insufficient TOP.

^c Chi-square probabilities.

* $p < .10$; ** $p < .05$; *** $p < .01$; **** $p < .001$.

both males and females, while the 1970 dropouts were all male. The graduates in the two cohorts, however, contained both sexes. Results are presented for the full cohorts at 2-year follow-up. Demographic, opioid, and nonopioid comparisons are summarized.

Table 8 shows that success and improvement rates were higher for the 1970 cohort. Only the differences between the dropouts failed to reach significance. Figure 5 shows that rates increased similarly by time-in-program for both cohorts, although the values were nonsignificantly higher among the longest-staying 1970 dropouts.

Demography did not account for the cohort differences. Success and improvement for the 1974 cohort did not significantly associate with age or race, although female rates exceeded those of the males among the dropouts. With demography controlled, however, the 1970 rates remained higher.

The cohort differences related to the primary drug distribution. When only opioid abusers are compared, the overall improvement rates are indistinguishable, and the success differences reverse somewhat, favoring the 1974 dropouts (Table 8). The latter, however, were inflated by the higher rates among the 1974 females. Adjusting for these sex differences yields the striking replication shown in Fig. 6. Results are plotted by time-in-program for two subcohorts of male opioid abusers. Both curves illustrate the lawful relationship between length of stay and positive change at follow-up.

Table 8 shows that the 1974 nonopioid abusers yielded the lowest rates in either cohort. Almost 45% of the 1974 clients who could be followed for 2 years were nonopioid abusers. Among these, success and improvement rates were 18% and 39%, respectively (dropouts); and 42% and 83%, respectively (graduates). Though not shown, a time-in-program difference was also apparent among the nonopioid abusers. Rates for > 12-month dropouts doubled those for < 12-month dropouts (Success = 29.5% vs 14.5%; Improvement = 58.6% vs 30.4%).

The results within the 1974 nonopioid group varied by primary drug. For example, alcohol and marijuana abusers were a 63% majority, but less than 10% of each achieved success. The remainder of the nonopioid abusers were mainly barbiturate or amphetamine abusers, and a few claimed no primary drug. Their success rate was 37%, approaching that of the opioid abusers (54.4%).

These primary drug differences related to reductions in the DrugDX since crime decreased uniformly by drug of abuse, although fewer marijuana abusers dropped their CrimDX. Abstinence from the primary drug was achieved by 64% of the opioid abusers, 12% of the alcohol and marijuana abusers, and 43% of the other nonopioid groups. Thus, the low success rates among the 1974 nonopioid abusers reflect their higher proportion of primary alcohol and marijuana abusers, few of whom achieved abstinence.

Table 7
Best Success and Improvement Rates through All Years of Follow-Up for the 1970-1971 Cohort,
by Time-in-Program, Demography, and Primary Drug of Abuse

	Success						Improvement ^a					
	Dropouts		Graduates		Totals		Dropouts		Graduates		Totals	
	Total N	%	Total N	%	N	%	%	%	%	%	Diff. ^b	%
Totals	150	30.7	71	74.6	221	44.8	56.0	93.0	***	67.9		
Time-in-program												
< 12 months	72	16.7	-	-	-	-	38.9	-	-	-	-	-
> 12 months	78	42.3	-	-	-	-	71.8	-	-	-	-	-
<i>p^c</i>		***		-		-	***	-	-	-	-	-
Race												
Black	56	32.1	24	75.0	80	45.0	58.9	95.8	***	70.0	***	70.0
Hispanic	40	32.5	18	66.7	58	43.1	60.0	88.9	***	69.0	***	69.0
White	54	27.8	29	79.3	83	45.8	50.0	93.1	***	65.1	***	65.1
<i>p^c</i>		-		-		-	-	-	-	-	-	-

Age	37	32.4	13	69.2	***	50	42.0	56.8	84.6	*	67.3
<19											
19-26	92	25.0	34	79.4	***	126	39.7	53.3	97.1	***	65.1
27+ ^c	21	52.4	24	70.8	—	45	62.2	66.7	91.7	**	80.0
^c _p		**		—			**	—	—		*
Drug	136	32.4	56	78.6	***	192	45.8	55.9	94.6	***	67.5
Opioid	14	14.3	15	60.0	***	29	37.9	57.1	85.7	*	69.0
^c _p		*		*			—	—	—		—
Sex											
Males ^d	—	—	44	86.4	—	—	—	—	97.7	—	—
Females	—	—	27	74.1	—	—	—	—	85.2	—	—
^c _p		—		—			—	—	—		—

^a Less than 2% of the sample worsened, while 31% did not change and 67.9% improved. Percent improved in the table includes those clients who maintained a Success Index #4 pre- and posttreatment, here classified as "did not change."

^b Chi-square values.

^c *p* values derived from *F* or chi square, testing largest difference.

^d There were no female dropouts in the sample.

p* < .10; *p* < .05; ****p* < .01.

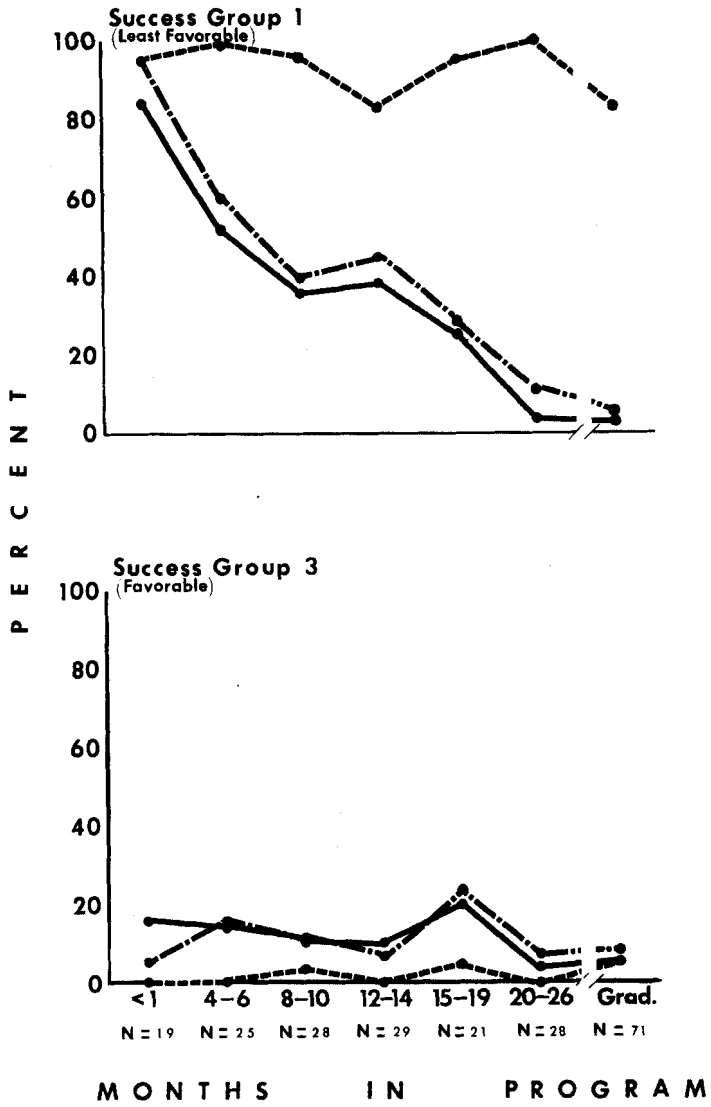


Fig. 2.

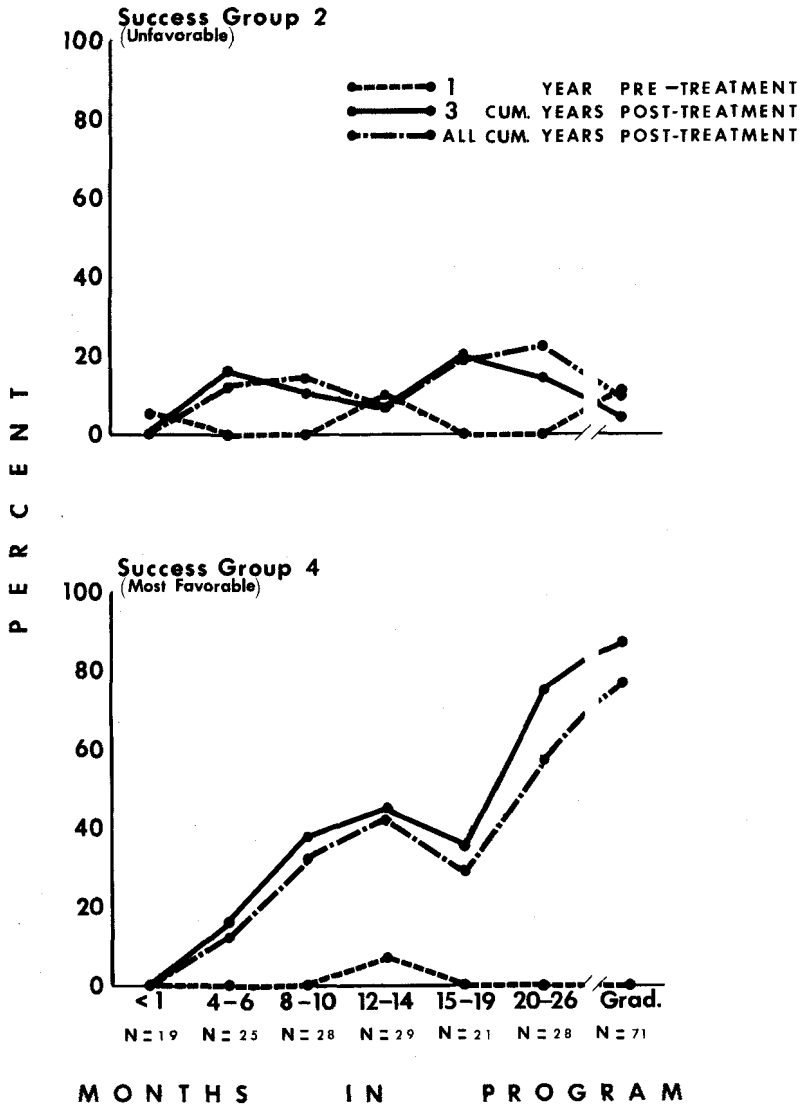


Fig. 2. The Success Index for the 1970-1971 cohort in relation to time-in-program (TIP) for the year prior to treatment and all years posttreatment. Almost 100% of each TIP group was in the lowest index before Phoenix. In follow-up, Groups 2 and 3 showed few TIP differences. However, TIP systematically related to reductions in Group 1 (least favorable) and to increases in Group 4 (most favorable). The small reversal in the 15-19-month TIP reflects its larger proportion of young clients.

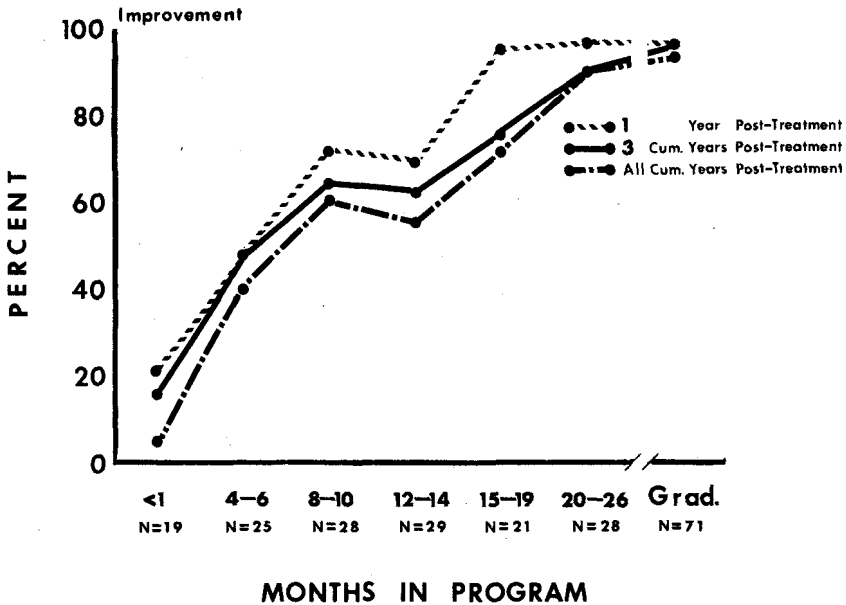


Fig. 3. Improvement over pretreatment status in relation to time-in-program through all years of follow-up for the 1970-1971 cohort.

This factor also accounted for the significant difference in rates between the nonopioid abusers in the two cohorts. Only 14% of the 1970 cohort were nonopioid abusers. However, their high success rate reflects the fact that all but five were primary prescription users or claimed no primary drug.

The conservative DrugDX requirement of continued abstinence from the primary drug suppressed the success rates among the 1974 alcohol and marijuana abusers; and, to some extent it masked drug use among the successes in the other primary drug groups. For example, opioid use and/or one drink among primary alcohol abusers, or one "joint" among primary marijuana abusers resulted in a less than Best Success status throughout all years of follow-up. Therefore, abstinence was rare, although other analyses revealed significant decreases in the frequency of their primary drug, and there was little use of opioids or other illicit substances.

Conversely, more of the other nonopioid abusers attained abstinence from their primary drug, but (with the exception of the "no primary" group) their use of alcohol or marijuana did not violate the DrugDX. Similarly, most opioid abusers achieved abstinence, but their use of nonopioids did not yield a DrugDX. For example, approximately one-third of the successful opioid abusers in both

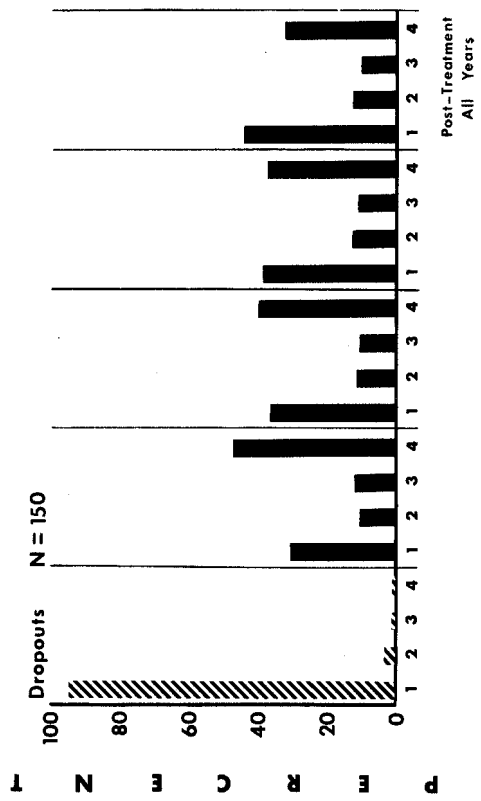
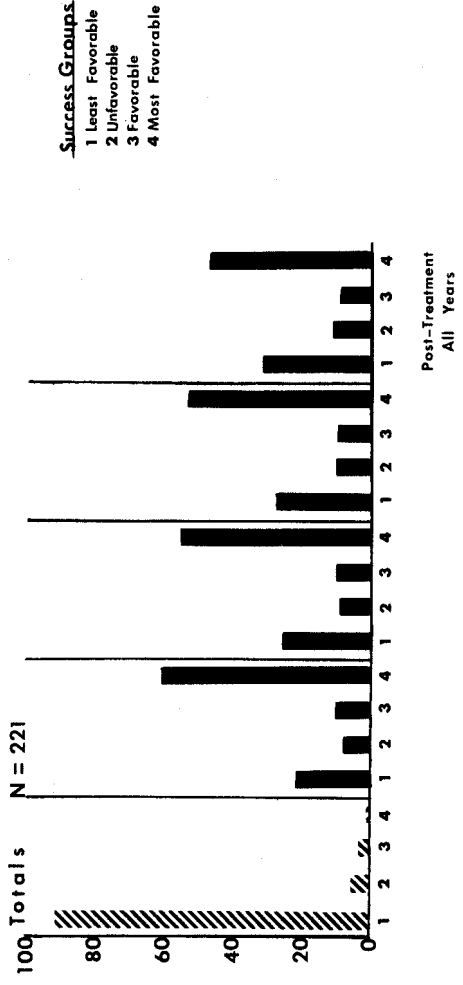
Table 8
Success Comparisons 1970-1971 and 1974 Cohorts (%)

	Dropouts			Graduates			Totals		
	<i>N</i>	Post 1	Post 2, cum.	<i>N</i>	Post 1	Post 2, cum.	<i>N</i>	Post 1	Post 2, cum.
<i>Total sample</i>									
<i>Best Success (#4)</i>									
1970	150	42.7	34.7	71	90.1	88.7	221	59.7	53.9
1974	215	39.1	34.9	31	74.2	67.7	246	43.5	39.0
<i>p</i> ^a		—	—		**	**		***	***
<i>Improvement</i>									
1970	150	68.7	63.3	71	95.8	95.8	221	77.4	73.8
1974	215	60.5	56.3	31	93.6	93.6	246	64.6	60.9
<i>p</i> ^a		*	—		—	—		—	—
<i>Opioid abusers</i>									
<i>Best Success (#4)</i>									
1970	136	47.8	38.2	56	96.4	94.6	192	62.1	56.3
1974	117	54.7	48.7	19	94.7	89.5	136	60.3	54.4
<i>p</i> ^a		—	*		—	—		—	—
<i>Improvement</i>									
1970	136	68.4	63.2	56	98.2	98.2	192	76.8	73.2
1974	117	75.2	70.9	19	100.0	100.0	136	78.7	75.0
<i>p</i>		—	—		—	—		—	—
<i>Nonopioid abusers</i>									
<i>Best Success (#4)</i>									
1970	14	28.6	28.6	15	66.7	66.7	29	48.3	48.3
1974	98	20.4	18.4	12	41.7	33.3	110	22.7	20.0
<i>p</i> ^a		—	—		—	*		***	***
<i>Improvement</i>									
1970	14	71.4	71.4	15	86.7	86.7	29	79.3	79.3
1974	98	42.9	38.8	12	83.3	83.3	110	47.3	43.7
<i>p</i>		**	**		—	—		***	***

^a Chi-square values.

p* < .10; *p* < .05; ****p* < .01; *****p* < .001.

cohorts used alcohol and/or marijuana more than three times weekly during at least 1 month of follow-up, although virtually no use of other substances was indicated. Thus, while the DrugDX criteria accord with the TC's strict clinical view of success, they do not fully reflect the actual pattern of drug use in follow-up among different drug abusers.



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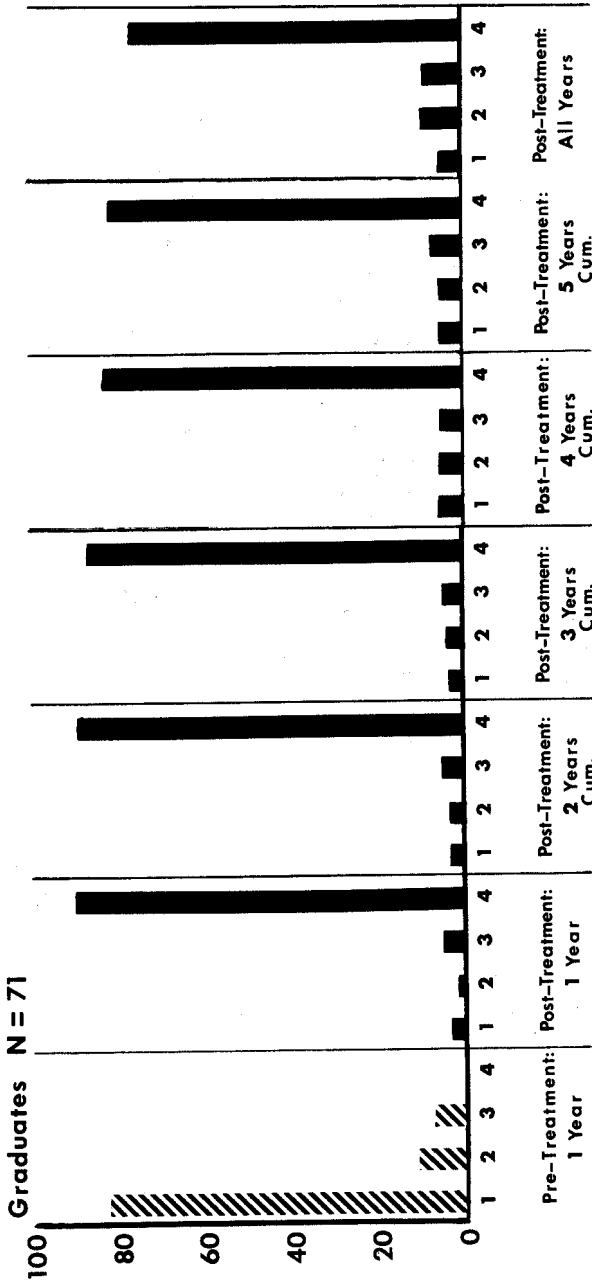
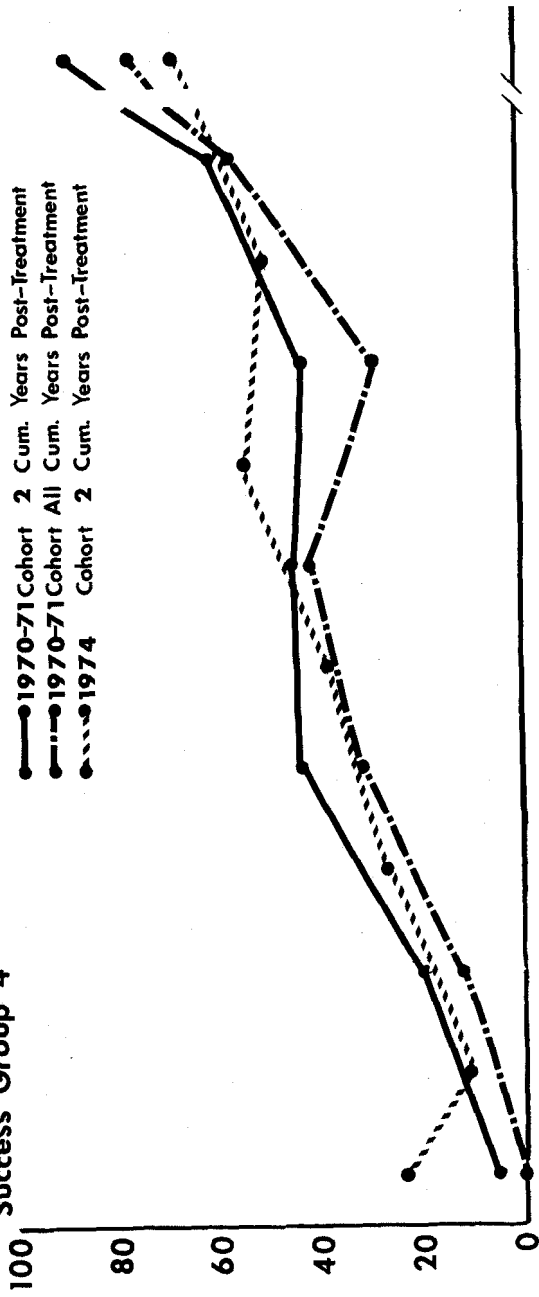


Fig. 4. The success distribution through all years of follow-up. The full dropout sample could be followed 3 cumulative and all years ($\bar{X} = 4.7$ years; range 3-6). The full graduate sample could be followed 5 cumulative years and all years ($\bar{X} = 6.4$ years; range 5-7 years). For dropouts and graduates, Best Success rates (#4) declined by less than 15% through all years.

Success Group 4

- 1970-71 Cohort 2 Cum. Years Post-Treatment
- - - 1970-71 Cohort All Cum. Years Post-Treatment
- - - 1974 Cohort 2 Cum. Years Post-Treatment



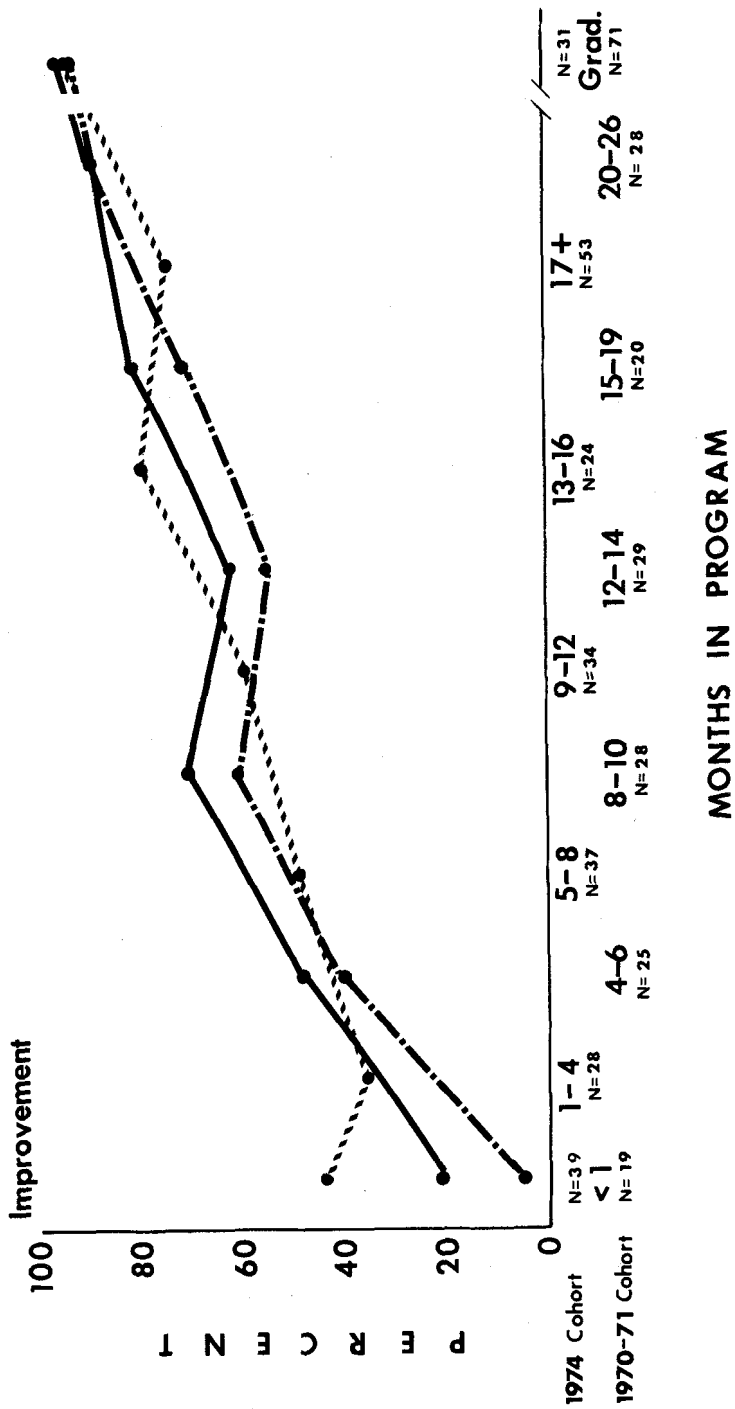


Fig. 5. Comparisons between the full 1970-1971 and 1974 cohorts through 2 years of follow-up. Success (#4) and improvement rates are shown by the time-in-program classifications for each cohort.

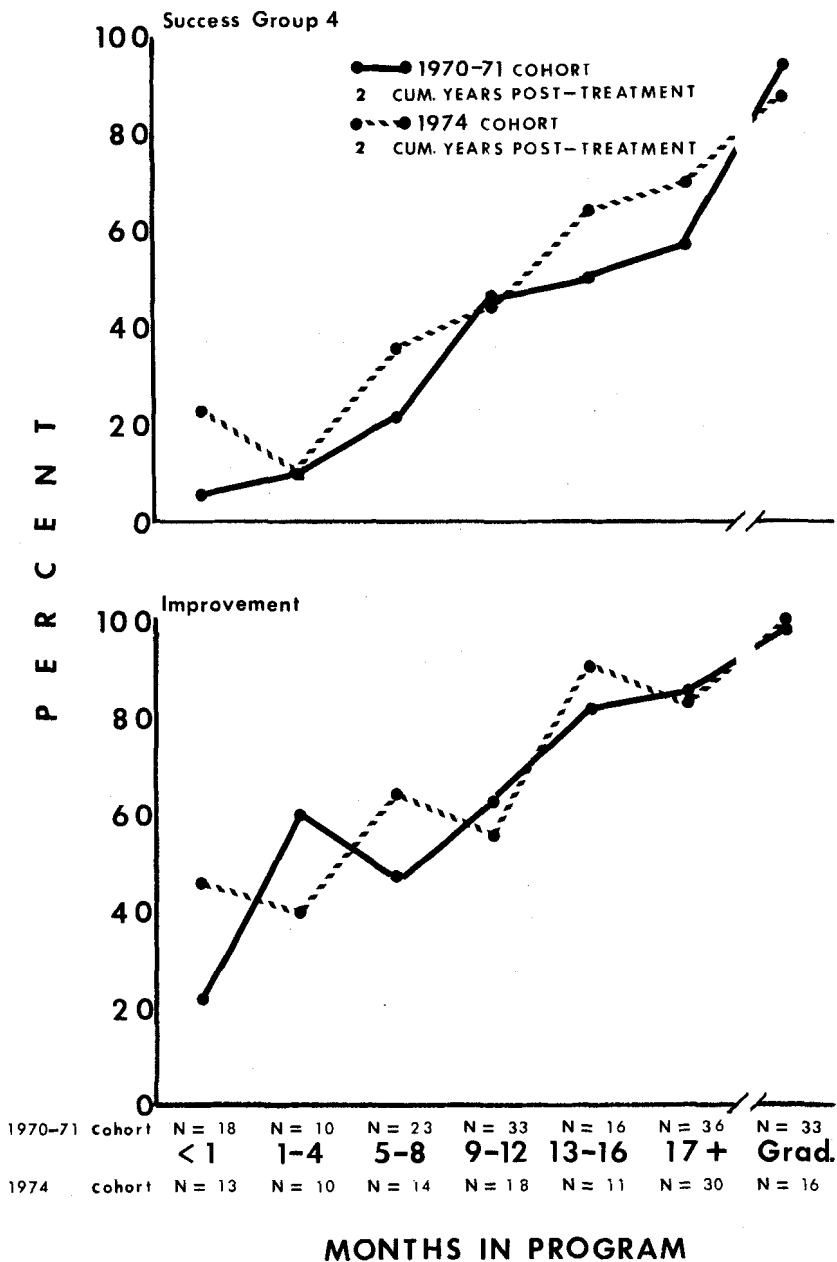


Fig. 6. Comparisons between the 1970-1971 and 1974 cohorts through 2 years of follow-up for male opioid abusers. Success (#4) and improvement rates by time-in-program are shown by the 1974 TIP classifications. There are no significant cohort differences at any point on the curve, revealing a striking replication of the time-in-program function.

In summary, the cohort comparisons indicate that success related to primary drug: Opioid abusers reveal the highest rates, followed by nonopioid abusers whose primary substances were not alcohol or marijuana. Few successes occurred among primary marijuana or alcohol abusers, but their frequency of primary drug use decreased, as did criminal involvement, particularly among the alcohol abusers.

More of the "other" nonopioid and the opioid abusers in both cohorts were successful, indicating absence of crime and abstinence from their primary drug, but their successes revealed moderate use of alcohol and marijuana. This finding is difficult to interpret within the context of the social use of these drugs. Nevertheless, the positive status of the successful clients, opioid and nonopioid, was confirmed by the absence of criminality and improved employment.

For both opioid and nonopioid abusers, however, success and improvement were higher for graduates and increased with length of stay. This, and the close correspondence between two opioid cohorts—separated by 3-6 years—provides an impressive replication of the basic results of the study.

DISCUSSION

Are the Phoenix success results consistent with those of other studies, and can they be generalized to other TCs? Precise comparisons with the few investigations utilizing a composite index of outcome are impeded because of differences in method of constructing the indices and in reporting results. For example, some studies accept reductions in the extent of drug use and crime in their composite outcomes. These also report cumulative success results that combine intermittent and continually favorable outcomes (e.g., Barr and Antes, 1981; Burt et al., 1979; Simpson and Sells, 1981). In the present research, measures of extent did not enter the composite indices of crime or drug use, and the requirement of continued favorable status excluded intermittent successes.

The generality of the present findings may also be limited by program variability. This is illustrated in comparisons with therapeutic community results obtained in the DARP studies. The latter employed a favorable outcome measure which resembled the Best Success Index used in the present work (see Simpson and Sells, 1981). Results were compared for male opioid addicts in the first posttreatment year. In the DARP 1972-1973 cohort, 28% of the TC clients received a highly favorable outcome, compared with 54% of the 1971 Phoenix opioid addicts (dropouts = 44.4%; graduates = 96.0%).

This success difference did not relate to sample composition since the Phoenix 1970-1971 dropouts and the DARP TCs were similar in age, primary drug, race, and retention. Nor does it reflect variability within DARP's TC modality since its outcome results did not vary significantly across the seven

programs surveyed (Joe et al., 1980).^{*} Nevertheless, the higher Phoenix success rates do suggest that program effectiveness may vary within the TC modality, a conclusion reported in other multiprogram studies (e.g., Sheffet et al., 1980; Winick, 1980). Differences in clients served, philosophy, resources, and clinical and management experience, as well as success criteria, highlight the need for single-program studies.

The DARP and Phoenix studies, however, were consistent in showing a significant positive relationship between TIP and follow-up status. This correspondence validates a main conclusion from both research efforts that stresses the importance of treatment tenure for successful outcome.[†]

The issue of generality emphasizes some important caveats in this and other research on success or global outcome. First, the limits of self-reported data must be considered in the interpretation of success rates based upon composite indices, regardless of how these are constructed. The reliability and validity of self-report on the separate outcome variables is high, but (as discussed in the Method section), inclusion of agency information in the indices could lower overall success rates.

^{*}For this comparison, the Phoenix success rates are adjusted because the criteria were revised to match exactly those employed by DARP: no criminality, assessed through self-reported arrests and incarcerations; no opioid and no nonopioid use; less than daily marijuana use. Comparisons were limited to male opioid addicts defined by DARP as active; i.e., who were daily users of opioids in the 2 months prior to treatment. The success differences between DARP and Phoenix are not related to sample differences in retention. DARP drew a 14% sample of all 1972-1973 admissions; the Phoenix dropout cohort was a 22% sample of all 1970-1971 male single admissions. Both samples purposefully overrepresented > 12-month clients compared with TIP distributions in their parent population. The DARP sample adjusted for this bias with a weighting procedure which, however, yielded no significant difference between the adjusted and unadjusted results on its multiple outcome variables. Thus, it is unlikely that the success differences between the two studies reflect errors of weighting, although that possibility cannot be ruled out. Finally, DARP findings on success rates and program comparisons were obtained in two separate studies of essentially the same sample of TC clients. The study of program differences did not involve composite indices but only the multiple outcome variables that entered into these indices. Results indicated no significant program differences in effectiveness within the TC modality, a finding presumed valid for the composite indices (Joe et al., 1980).

[†]Success rates were reported in studies of the methadone treatment network in Washington and for several modalities in New York, including four TCs (Burt et al., 1979). Comparisons are not proper since one of these was Phoenix House. However, this study illustrates some of the above methodological problems. For example, the TCs report 58% success rates (full extent of recovery in their system) but no time-in-program effects, which is contrary to the Phoenix House and DARP results. The composite measures were similar to those of the present research. However, status was compared for a period 2 months prior to treatment and 2 months before interview. This represents a short time-sampling of behavior compared with the 1-year observations in the DARP studies and the all-year data in the present work. As discussed elsewhere, the 2-month measure tends to inflate success rates and obscure important differences by time-in-program (De Leon and Andrews, 1978).

Second, the present success and improvement results describe a narrow band of clients who met particular behavioral and temporal criteria. These ignore the clients who were intermittently successful or improved. For example, about 60% of the sample improved under the present criteria. However, each changed status required elimination of drug use or criminal activity, and like success, each had to be continually maintained throughout follow-up. Measures of extent that assess the degree of behavioral change would more fully describe improvement, and delineation of patterns of outcomes that reflect combinations of behavioral and temporal measures would illuminate the client's changing status.

Third, these results do not provide a complete picture of adjustment among the successful clients, but describe change in drug use and criminality. Other findings for the 1974 cohort have revealed a high correlation between success and psychological profiles at follow-up. The latter, however, did not appear particularly healthy at follow-up (De Leon and Jainchill, 1981).

Thus, sophisticated indices are needed to capture the extent and diversity of individual change. In addition to psychological dimensions, a portrait of the "health," or adaptation, of the successful individual must include social drug use and quality-of-life variables.

Issues of Interpretation. Notwithstanding the above qualifications, the present findings firmly establish a relationship between residency in the TC and client status at follow-up. Conclusions concerning treatment effectiveness, however, must be interpreted in light of methodological, statistical, and other considerations. Some of these are reviewed below, and a perspective for understanding treatment influence is outlined.

The most serious threat to the validity of inferences about treatment is the lack of control groups. The follow-up sample may be self-selected to seek, remain in, and benefit from the therapeutic community; or, perhaps, to improve without any treatment. Thus far, however, solutions to these selection problems have eluded research strategies. Assembling untreated matched controls or comparative treatment groups through random assignment has not been feasible. There are ethical problems in withholding treatment, and random assignment to modalities, even those selected by clients, requires huge samples to absorb attrition rates arising from client-treatment mismatch.

Statistical and behavioral hypotheses could be advanced to explain the observed changes over time. For example, statistical regression to the norm or less deviancy would predict changes from extreme levels or points of reference. Highly deviant behavior is not likely to repeat on second observation but tends to approach more normative or less extreme levels. This hypothesis assumes that peak deviancy for clients occurs in the year prior to Phoenix. At follow-up, a decline (i.e., regression) to less deviancy would be expected, unrelated to residential treatment.

Two considerations argue against statistical regression. That peak deviancy would have declined without treatment is a questionable a posteriori assumption. There is no direct way of assessing status beyond the year of the peak had these clients not made contact with Phoenix House. Moreover, with rare exceptions, criminality and drug use during treatment remained at zero for all clients. Statistical regression would not expect this precipitous and uniform drop from peak to near zero deviancy, irrespective of individual differences in pretreatment deviancy or in their length of stay.

A behavioral cycle hypothesis views addiction (and associated criminal activity) as recurrent episodes of illness. These pass through peaks and troughs independent of treatment influences, and perhaps modify over years as self-limiting phenomena. In the present results, for example, the uniform drop from the pretreatment peak would mark the end of a negative phase of the cycle, and success during treatment and through follow-up would be a continuation of the positive phase. At some undetermined point in follow-up a gradual worsening should commence, signaling the start of a new negative phase of the cycle.

Contrary to this hypothesis, there is no evidence for a new negative cycle in the long-term 1970 cohort. Among successes, the rates after year 1 declined by less than 15%. More problematic is that a behavioral cycle hypothesis is difficult to test empirically. Such a test must specify in advance a finite period for observing the completion of a full cycle. In the present design, client status was observed from 1 year pre- through 5 years posttreatment; moreover, agency records revealed that arrest rates throughout follow-up remained lower than 5 pretreatment years, not only the peak year prior to treatment (De Leon et al., 1979). Either these results reflect the self-limiting characteristics presumed for this illness, or the period of observation was still too short to permit onset of a new cycle. This interpretative dilemma does not readily allow for direct investigation.

In long-term follow-up, a variety of influences may affect client status; e.g., other treatments or a changing social climate. Treatments after Phoenix House did not significantly affect the Best Success rates in either cohort. For example, self-reported reentry into drug treatment occurred in 5% of 1970 graduates (5 cumulative years) and 39% of the dropouts (3 cumulative years). For the 1974 cohort, the values were 0% and 28% for the graduates and dropouts, respectively (2 cumulative years). Some successes did report later drug treatment, but no drug use. When these discrepancies are deleted, success rates reduce by 4% in each cohort.

Social climate factors such as the availability of illicit drugs, law enforcement pressures, and the general economy are often presumed to affect client adjustment after treatment. Relating broad social conditions to individual status is a formidable problem for analyses. Indications are, however, that these factors did not substantially affect the present findings.

For example, the declining trend in the availability of street heroin from late 1973 may account for its decreased use in the follow-up period. Opioid abusers did yield the highest success rates, but their results do not support an availability hypothesis. Among the 1970 clients, the largest reduction in heroin use occurs in the first posttreatment year (1971-1972), which precedes the declining trend. Furthermore, the 1974 heroin abusers also showed their largest reduction in their first posttreatment year (1975-1976). The similar first-year reductions, irrespective of year of separation, point more to treatment impact than to unavailability of heroin. Additionally, as reflected in their large DrugDX reductions, opioid abusers revealed little involvement with methadone or other drugs that have been increasingly present since 1973. With the exception of modest increases in marijuana and alcohol use, the pattern in follow-up was an overall decline in the use of all drugs (see De Leon, 1981).

Law enforcement policy did not appear significant in the present results. Evaluation of the tough New York Drug Law of September 1973, aimed at illicit drug sales and drug possession, concluded that it has not been consistently enforced (Joint Committee on New York Drug Law Evaluation, 1977). Paradoxically, then, the enforcement climate since the 1973 law may have been more lenient than in the period 1969-1972. Nevertheless, both cohorts revealed their largest reductions in the CrimDX, the comprehensive index of criminal activity. (Further evidence for lenient enforcement was seen in the multiple outcome variables of the criminal profile. The 1974 cohort revealed more criminal engagements than the 1970 cohort, but a somewhat lower number of arrests at follow-up.)

Economic influences were not prominent in maintaining the success status of clients. Full-time employment (EmpDX > 50%) did increase at follow-up for most clients, suggesting general influences from economic or employment-related factors. These influences appear minimal, however, since successes revealed significantly greater gains. Moreover, their salaries and job levels remained low relative to a similar demographic population in New York (Bondarin, 1976). Thus limitations relating to the client, to the treatment, or to other factors not associated with economic vicissitudes affected the earning potential of the successful individuals in follow-up.

That clients maintain their successful status in the years after Phoenix, however, may still involve factors that are unique to individuals. Thus far, regression analyses indicate little contribution to 1974 success rates from selected background variables. Success was negatively related to lifetime criminality, and positively correlated with pretreatment educational level. Though significant, these associations were small compared with the effects of time-in-program. Further analyses, however, must examine a wider range of variables in both cohorts to more fully assess the contribution of background factors.

The extent to which maturation influenced the long-term success results appears minimal. As described in the literature, the "maturing out" of addiction or deviancy is more apparent after age 35. In the present sample, over 70% were less than 30 years old at interview.

Though age overall did not consistently relate to retention or success, there were some age interactions. The 1970 graduates were significantly older than the remainder of the sample. For the 1970 dropouts and the 1974 female dropouts, successes occurred significantly more often in the older clients. In both cohorts, the youngest clients (< 19) were overrepresented among the > 12-month dropouts, but this did not yield more successes in that age group. In fact, few of the youngest 1970 successes had less than 20 months in the program. For example, a reversal in the 1970 TIP trend occurred in the 15-19-month group because of their high proportion of young clients (see Fig. 2). For the latter, then, long-term residency may be a necessary requirement for stable outcome. Thus, retention remained the most significant correlate of success for any age. However, the optimal period of stay may vary with age-related factors.

UNDERSTANDING TREATMENT INFLUENCE: A PERSPECTIVE

The above issues underscore the multivariate complexity of individual change implicit in the TC's perspective of the role of treatment. This perspective views the client who comes for treatment as a changing person for whom experience in a program represents a significant, albeit limited, episode in the continuing process of change and adaptation. Positive and negative pressures, extrinsic and intrinsic to the client, lead to treatment contact. Thereafter, the change process involves a balance between client factors and treatment and nontreatment influences that shifts during and following the residential experience.

For example, drug use and antisocial behavior are virtually absent throughout residency. Early in the program, this may relate more to the client's motivation, or external pressures, than to treatment. Continued positive behavior during residency, however, reflects the increasing contribution of the program's influence. After residency, nontreatment influences again assume relatively more importance; maintaining a positive life-style depends upon these influences and the stability of what is learned during treatment.

Testing the validity of this perspective was not an aim of the present study. However, the main findings are consistent with its hypothesis that outcome reflects the interplay of client and program factors.

First, the majority of both cohorts were voluntary admissions (1970-1971, 54.9%; 1974, 64.2%). Nevertheless, during residency, successful status was maintained by practically all individuals regardless of their reason for entry into

treatment or their length of stay. Clients in Phoenix House are a doorway away from the street, with no physical restraints upon their activities. They are free to leave, commit crimes, or take drugs. That they maintain positive behavior in residency is a consequence of choice, not risk, and implies influences arising from their participation in the TC's daily regime.

Second, even without control groups, a treatment effect is evident in that success rates were temporally related to residency in the program. Rates decreased from near 100% residential level in the first year after separation, the period most contiguous with treatment. Thereafter, however, they declined modestly, remaining well above pretreatment levels at magnitudes that are directly related to time spent in treatment. This close correspondence between client change and the length, presence, or absence of residency implicates a treatment impact.

Third, the importance of individual differences was also evident in the relationship between success and retention. Over 45% of the > 12-month dropouts had unfavorable outcomes, while a quarter of the < 12-month dropouts did attain success. These results imply that most residents require at least a year to change. Others need more, and a few benefit from less exposure to treatment. Individuals may contribute to their own length of stay, but time-correlated program influences are essential to render change.

Successful outcome, therefore, emerges from an interaction of client and treatment factors. The specific impact of the treatment experience is most apparent during and immediately following residency; thereafter, though less recognizable, its effects may integrate with (or perhaps alter) the contribution of other experiences in maintaining successful status. Some assessment of these is reported in a later study in which analyses are expanded to include patterns of outcome (e.g., failures, intermittent successes, and improvements). Results describe client perceptions of the relative importance of treatment and nontreatment influences upon their life-style since leaving Phoenix House.

Overall, the present study provides impressive evidence for the effectiveness of the therapeutic community approach in modifying drug abuse. Direct investigation of the change process during residency can strengthen conclusions concerning the specific relationship between treatment and outcome. With respect to the latter, beginning efforts in other TCs report a positive association between TIP, client insight, and participation in group encounters (e.g., Browne, 1980); and other Phoenix results for the 1974 cohort show a direct relationship between psychological change during treatment and success and psychological change at follow-up (De Leon, 1981; De Leon and Jainchill, 1981).

Finally, the present composite indices reflect one TC's austere treatment goal of social adjustment depicted in absolute, albeit conservative, criteria of success. Nevertheless, Phoenix House is a stable example of the traditional TC approach. While undoubtedly unique, its success and improvement results provide firm hypotheses for research in other settings.

ACKNOWLEDGMENTS

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