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Male and Female Drug Abusers: Social and Psychological Status 2 Years after Treatment in a Therapeutic Community

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ABSTRACT

A sample of male (N = 214) and female (N = 74) dropouts and graduates from the 1974 population in Phoenix House were followed 2 years after treatment. The sample was mainly opioid abusers, Black, and 19-26 years of age. A 4-h face-to-face interview traced social adjustment from 1 year pre- through all years posttreatment. Clients were retested with a psychological battery initially given at admission or during treatment. Results showed that success (no crime and no opioid use and/or no use of a nonopioid primary drug) was maintained throughout 2 years of follow-up by 38% of the males (dropouts 32.9%, graduates, 73.9%) and 42% of the females (dropouts 40.7%, graduates 50.0%); improvement (change from pretreatment status) occurred in over 59% of the males and 60% of the females; success and improvement increased by time in program for both sexes; psychological improvement during treatment and at follow-up was correlated with posttreatment success status. Among successes, the female improvement was significantly larger. The psychological improvement for women appears related to social-role factors that are modified during residency in the therapeutic community.

Evidence points convincingly to the effectiveness of the therapeutic community (TC) in rehabilitating the drug abuser [1-6]. There is an impression, however, that traditional TCs are less suitable for the female drug abuser [7]. This appears to be supported by data showing that relatively fewer females enter residential settings. Of these more drop out and often earlier than do

males [8, 9]. Thus the effectiveness of the TC in rehabilitating the female drug abuser remains to be empirically demonstrated.

A substantial literature describes sex differences in the social and psychological characteristics of addicts entering treatment. These studies generally reveal the female to be more disturbed than her male counterpart, a finding which is repeatedly obtained in TC studies [10-13]. Male and female admissions to Phoenix House, for example, characteristically evidence signs of depression, anxiety, and overall maladjustment on paper and pencil tests, but female scores are consistently worse than those of males'.

Recent investigations across seven other TCs closely replicate the Phoenix House findings. Females entering treatment reveal higher levels of emotional disturbance and psychosomatic symptoms, lower self-esteem, and greater maladjustment [9].

Studies of treatment outcome for the female drug abuser, however, remain scarce. The few published reports involving females usually define outcome by retention or completion of treatment, and results vary with respect to sex differences [14, 15]. Our investigation, however, does contain posttreatment results showing little difference between the sexes at 1 year follow-up in changed drug use and criminal behavior [16].

The present study represents the first to correlate social and psychological adjustment of males and females during and following treatment in a TC. Results are presented of a sex comparison drawn from a comprehensive follow-up study recently completed at Phoenix House [3].

METHOD

The Sample

The sample ($N = 424$) was drawn from the population in residence between July 1, 1974, and January 31, 1975. Male and female dropouts ($N = 371$), constituted a 38% sample of all 194 dropouts. Females ($N = 81$) represented 37% of all female dropouts; males ($N = 290$) represented 32% of all male dropouts. Graduates ($N = 53$) were a 43% sample of the 1974-1975 graduates; female graduates ($N = 12$) were 36% of all female graduates, and males ($N = 41$) were a 40% sample of all male graduates. The sample was randomly drawn under restrictive criteria which included metropolitan addresses at admission, psychological testing in treatment, and adjustment for representation by time in program (TIP).

An office system for tracking and locating was adapted from those utilized

Table 1. The 1974 Sample: Dispositions at Follow-Up[a]

	Males		Females		Totals	
	N	%[b]	*N*	%[b]	*N*	%[b]
Completed interviews	214	64.7	74	79.6	288	68.0
Dead	14	4.2	1	1.1	15	3.5
Refused	19	5.7	8	8.6	27	6.4
Out of state	14	4.2	1	1.1	15	3.5
Jail	8	2.4	0	0.0	8	1.9
Fugitive	11	3.3	1	1.1	12	2.8
Other	4	1.2	0	0.0	4	0.9
Unlocated	47	14.2	8	8.6	55	13.0
Total	331	100.0	93	100.0	424	100.0
Completed interviews corrected for Dead and Refused	214	71.8	74	88.1	288	75.4
Total uninterviewed excluding Dead and Refused	84	28.2	10	11.9	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]Percents may not add to 100.0 due to rounding.

by other investigators [17, 18] and NORC for the Drug Abuse Reporting Program (DARP) sample [19]. A detailed account of the system is provided in another report [20]. Clients were located and interviewed during 1977-1978.

Table 1 summarizes the dispositions of all of the males and females sampled. There were no large sex differences on any disposition, although fewer females were deceased and more were located and interviewed. When corrected for the percentages deceased and refused, the completed interview rate was 75% (72.3% of all dropouts and 96.0% of all graduates).

Table 2 summarizes the main characteristics of the 288 clients interviewed at followup (48 graduates, 240 dropouts). The interviewed sample was mainly male (74.3%), Black (68.6%), 19-26 years of age (52.8%), and primary opioid abusers (53.3%). The TIP proportions in the sample were roughly equal, but

Table 2. The 1974 Interviewed Sample and Population Characteristics[a]

	Dropouts		Graduates		Totals		Population	
	Males (N = 178)	Females (N = 62)	Males (N = 36)	Females (N = 12)	Males (N = 214)	Females (N = 74)	Males (N = 985)	Females (N = 254)
Race:								
% Black	72.5	66.1	55.6	58.3	69.6	64.9	59.6	56.3
% Hispanic	15.7	14.5	8.3	16.7	14.5	14.9	16.1	16.5
% White	11.8	19.4	33.3	25.0	15.4	20.3	23.6	26.0
% other	0.0	0.0	2.8	0.0	0.5	0.0	0.7	1.2
Age								
% <19 years	15.2	25.8	27.8	33.3	17.3	27.0	17.7	43.7
% 19-26	53.4	53.2	47.2	58.3	52.3	54.1	47.5	37.8
% 27+	31.5	21.0	25.0	8.3	30.4	18.9	34.7	18.5
$\bar{X}$ age	24.80	22.0	23.8	21.4	24.6	21.9	25.9	21.0
SD	6.66	5.68	7.72	4.56	6.84	5.49	7.76	6.75
Primary drug:								
% opioid	58.4	39.3	58.3	33.3	58.4	38.4	44.1	36.2
% nonopioid	41.6	60.7	41.7	66.7	41.6	61.6	55.9	63.8
Tip:								
% <5 months	27.0	35.5	–	–	22.4	29.7	55.3	48.8
% 5-12	30.9	27.4	–	–	25.7	23.0	15.4	20.1
% >12	42.1	37.1	–	–	35.1	31.1	20.2	18.1
% Graduate	–	–	–	–	16.8	16.2	9.0	13.0

[a]Percents may not add to 100.00 due to rounding.

overrepresented the longer staying dropouts. Proportional sampling would have yielded too few long-staying clients for statistical comparison.

Females were significantly younger, but the differences were larger among graduates than dropouts; fewer females reported opioids as their primary drug of abuse (males 58.4% vs females 38.4%). Within the nonopioid group the primary drugs reported were alcohol (males = 31.7% vs females = 36.8%), marijuana (males = 41.5% vs females = 26.3%), and "other," usually barbiturates or amphetamines (males = 26.8% vs females = 36.9%). Graduate females had a significantly shorter TIP than graduate males.

The interviewed and uninterviewed clients did not differ significantly on these characteristics, and neither differed from the 1974 population in Phoenix House. Nonetheless, inferences beyond the interviewed clients remain tentative until other variables are surveyed.

Instruments

The follow-up protocol utilized a structured questionnaire which surveyed the life changes of the client before and after Phoenix House and a psychological battery consisting of four standard paper and pencil tests. The survey contained over 225 items, binary or scaled rating, that focused upon four main temporal periods. (1) Background: Family, social, personal, drug, and criminal history in the years prior to Phoenix (lifetime). (2) Pre-Phoenix: Month by month tracing of life activities in the year before entry into Phoenix. (3) Phoenix experience: The client's expectation and perception of treatment benefits, significant treatment influences, staff and peer relations, and reasons for termination. (4) Post-Phoenix: Month by month tracing of life activities, e.g., drug use, drug and other treatments, criminality, employment, and social and personal relations across all the years of follow-up. [Items for the survey were drawn from several sources used in other research at Phoenix and elsewhere. These included the Phoenix Resident History Questionnaire (PRHQ) and the New York City Addiction Services (ASA) Questionnaire, used in an earlier study of different modalities, which included Phoenix House (systems science). Additional items were selected from CODAP and DARP surveys.]

Seven standardized psychological tests and scales were employed. All clinical and experimental scales of MMPI were administered. Its reliability, validity, and wide applicability are extensively documented in the literature. The four pathology scales which are validated in the psychiatric literature as indices of psychopathology, consist of the Shortened Schizophrenia Scale

[Sc, 21], the Shortened Manifest Anxiety Scale [SMAS, 22], the Beck Depression Inventory [BDI, 23], and the Socialization Scale of the CPI [Soc., 24]. The Beta Intelligence Test is a standard measure of intelligence. It is extensively used in every variety of population and is constructed to minimize errors arising from verbal and reading deficits. The Tennessee Self Concept is a standardized test for assessing self-esteem and psychological disturbance. Norms and scores from various comparison groups have been published, and it has demonstrated sensitivity to detect psychiatric changes [TSC, 25].

The choice of the above instruments was based upon several considerations. (1) Each has published impressive reliability and validity data. (2) Each has fairly easy instructions, and administration in a group setting is not difficult. (3) All have been employed with narcotic, normal, and/or psychiatric populations. (4) All have been used with previous Phoenix samples.

The Indices of Change

Success, in the TC, is a shorthand term describing the essential clinical goals of prosocial behavior and freedom from drugs. Thus individual social adjustment was measured with three composite indices derived from 16 separate variables in the domains of criminality, drug use, and employment.

The Criminal Index (CrimDX): If there was at least one episode of criminal activity or at least one 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 for all clients if there was (a) any use of any opioid (heroin, methadone, delaudid, or other opioid) irrespective of the client's primary drug pretreatment or (b) any use of the primary drug, opioid or nonopioid. For clients who reported 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 3 times in 1 month. Again, a DrugDX in any month resulted in a DrugDX for the entire year and for all cumulative years. Time in drug treatment did not enter the scoring since the clients who reported drug treatment also indicated drug use.

The Employment Index (EmpDX): This is a 3-point scale based upon actual employable months. The value is determined by the ratio of months of full

employment (or weighted combinations full and part-time employment) to total employable months, i.e., all months excluding those in jail, or rarely, those involving nondrug-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 4-point scale of favorable status. Criminality was judged more negative than drug use in the rating. Employment, the EmpDX, was excluded from the 4-point success index for empirical reasons. A 12-point index that included the EmpDX correlated above +0.90 with the 4-point scale, indicating that the addition of the EmpDX did not significantly change the client's relative status. The 4-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 DrugDX.

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 once 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. Conversely, a best Success Index (#4) had to be maintained for all cumulative years. An index less than best was included in the results irrespective of the minimum requirement for time out of program (TOP). However, best successes were excluded if they could not meet the TOP requirement. These criteria represent Phoenix's austere requirements for success. However, they generally accord with the conservative view of clinical success in other traditional TCs.

Special Methodological Considerations

1. Data obtained at admission for activities for 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.

2. Time at risk (TAR) was defined as TOP minus months in jail. For example, some clients could be followed 2 years since leaving treatment but their actual time on the street could be shorter if they spent any months in jail. Actually, during the 2 year follow-up period, mean time in jail for the entire sample was 1.5 months. Nevertheless, TAR entered into the construction of the Success Index. Jail time was automatically scored a CrimDX. Also, a DrugDX was scored if the client failed the drug use criteria while in jail. Time spent in drug treatment settings, however, was considered a risk period although some investigators have argued otherwise [26].

3. Complete reliability and validity studies are detailed in a later report. Among all successes, analyses revealed high internal consistency in the self-reported outcome variables and good corroboration with agency records (Criminal Justice, drug treatment, urine analyses). Thus, among successes, reliability and validity of self-report were impressive for the separate outcome variables in the domains of crime and drug use. As discussed elsewhere, however, the inclusion of agency information in the outcome indices could alter the success rates [27].

The validity of the psychological scale changes was ascertained by evidence indicating little distortion in the records at either point. There were no TSC or MMPI profiles that were computer discarded; the means and variability of the scores were comparable to those reported for similar populations. The long intertest period (2-3 years) minimized the likelihood that score changes were due to practice or regression effects, and response artifacts were not present in that measures of defensiveness, lying, and social desirability were nondeviant.

4. For the success data, the primary statistical analyses evaluated change over time (pre- to posttreatment) 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 Success Index 4 that remained 4 posttreatment, was scored a positive change. In contrast, Success Indices 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 two cumulative post-treatment years. The latter strains statistical assumptions and biases against significance, but reflects the TC's temporal criteria for maintaining favorable status. Differences between groups were examined with several association statistics provided by the SPSS Crosstabs programs.

5. Psychological scores and profiles were computer processed by the Roche Psychiatric Institute (MMPI) and Counselor Recordings and Tests (TSC). Beta IQ and selected scales (Beck, Anxiety, Schizophrenia, Socialization) were manually scored and computer analyzed.

Statistical analysis of psychological change was carried out on all clients for whom there existed at least one psychological test initially and at follow-up. Over 99% of the sample provided at least one psychological test and 66% completed a full psychological battery. Thus the size of the N for each test mean varied. All statistical tests, however, were applied to the same subjects over time, obviating any confounding due to the changing of sample size. Differences between groups were examined with ANOVA and contrast t-tests. These included all clients with a Success Index and a Time 1 or follow-up score since missing scales was a randomly distributed error. Results from multiple regression analyses are reported where appropriate.

RESULTS

Success Rates. Tables 3 and 4 show the distribution of Success Index for males and females. Thirty-five percent of the dropouts and 68% of the graduates maintained a Best Success Index (#4) across 2 years of follow-up. Prior to treatment, 9% of the female dropouts and 1% of male dropouts obtained a best Index 4, but there were no graduates, male or female, with a best Index.

Across 2 follow-up years, success rates among dropouts did not differ by sex. Among graduates, success rates for males were higher than for females. When the two favorable outcome categories are combined (Indices 4 and 3), however, the rates are higher for the females, among both dropouts (females 77.8% vs males 52.2%, $p < .01$), and graduates (females 100.0% vs males 86.9%, *N.S.*).

Improvement Rates. The actual proportion of individuals who changed is more clearly shown when absolute status is ignored. Table 3 contains the proportion of positive changes from each pretreatment index (Improvement).

Table 3. Success Index at 2 Years Follow-Up[a] (percent)[d]

	Dropouts			Graduates			Totals		
	Pre	Post 1	Post 2 cum.	Pre	Post 1	Post 2 cum.	Pre	Post 1	Post 2 cum.
Males		(N = 161)			(N = 23)			(N = 184)	
4	1.2	36.6	32.9	0.0	78.3	73.9	1.0	41.8	38.0
3	14.3	20.5	19.3	8.7	13.0	13.0	13.6	19.6	18.5
2	1.2	11.2	11.2	4.3	8.7	13.0	1.6	10.9	11.4
1	83.2	31.7	36.7	87.0	0.0	0.0	83.7	27.7	32.1
Positive change[b]		2*	–		4*	4*		4*	3*
Females		(N = 54)			(N = 8)			(N = 62)	
4	9.3	46.3	40.7	0.0	62.5	50.0	8.1	48.4	41.9
3	40.7	35.2	37.0	25.0	37.5	50.0	40.3	35.5	38.7
2	0.0	5.6	9.3	25.0	0.0	0.0	1.6	4.8	8.1
1	50.0	13.0	13.0	50.0	0.0	0.0	50.0	11.3	11.3
Positive change[b]		2*	–		2*	2*		3*	3*
Sex differences p[c]	4*	3*	3*	2*	–	–	4*	3*	4*

Totals		(*N* = 215)			(*N* = 31)			(*N* = 246)	
4	3.3	39.1	34.9	0.0	74.2	67.8	2.8	43.5	39.0
3	20.9	24.2	23.7	16.1	19.4	22.6	20.3	23.6	23.6
2	0.9	9.8	10.7	6.5	6.5	9.7	1.6	9.3	10.6
1	74.9	27.0	30.7	77.4	0.0	0.0	75.2	23.6	26.8
Positive change[b]		4*	2*		4*	4*		4*	4*

[a]Success Index 4: Most Favorable 2*: $p < .05$.
3: Favorable
2: Unfavorable 3*: $p < .01$.
1: Least Favorable 4*: $p < .001$.

[b]The sign test for correlated proportions was applied to number of positive changes from Pre to Post 1 and Pre to Post 2 cumulative years. To keep all of the data ties were included.

[c]Chi-square probabilities. *P* values indicate significant differences in the distribution of the Index.

[d]Percents may not add to 100.0 due to rounding.

Overall, less than 8% of the sample worsened and 36% didn't change; 56% of the dropouts improved (females 63.0% vs males 54.0%, N.S.), as did 94% of the graduates (females 87.5% vs males 95.7%, N.S.).

That more female dropouts made a favorable change did not relate to sex differences in pretreatment status. Prior to treatment, over 75% of the dropouts received a pretreatment Index 1 and 20% an Index 3, with only scattered percentages in Indices 2 and 4. Significantly fewer females had Indices 1 and 2, reflecting their lower involvement in crime (CrimDX) and proportionately more received an Index 3 (DrugDX only). In follow-up, over 67% of the dropouts with a pretreatment Index 1 positively changed, but the shift was significantly greater for females (females 83.9% vs males 64.3%, $p < .01$). Although not significant, more females positively changed from Index 3 (females 40.0% vs males 24.0%). Thus, controlling for differences by sex in pretreatment index, favorable outcome and improvement rates remain consistently larger for females.

Table 4 shows that success and improvement rates were not consistently related to age or race, although fewer Whites and younger clients were successful among the females. For both sexes, however, rates were significantly higher among the primary opioid abusers. Females, however, revealed significantly higher nonopioid success rates and opioid improvement rates.

Success and improvement rates were positively related to time in program. Graduates reveal the highest rates and longest time in program (graduates, $\bar{X}$ months = 34.8 vs dropouts, $\bar{X}$ months = 12.5). Among dropouts, success rates for clients <5, 5-12, and >12 months were 18, 32, and 52%, respectively; improvement rates were 40, 51, and 75%.

The relationship between TIP and outcome was similar by sex, but <12 months the female rates are significantly higher. After 12 months, female success rates declined below that of the male dropouts, although their improvement rates continued to increase and equal that of the >12 month males.

The sex difference <12 months reflects an interaction of primary drug and, to some extent, age. Females <12 months had proportionately more older clients and opioid abusers, while their >12 month dropouts were younger and more were nonopioid involved; males >12 months had more opioid abusers. Regression analyses revealed that for males and females, TIP as the main effect contributed most to success. However, among females the interaction of age with TIP contributed more than TIP alone. Thus success rates mainly related to TIP and opioid abuse for both sexes, but particularly for the older females in treatment <12 months.

In part, the drug of abuse differences reflect the DrugDX criteria which

Table 4. Best Success and Improvement Rates by Time in Program, Demography, and Drug of Abuse[a,d]

	Success						Improvement			
	Males		Females				Males	Females		
	Total *N*	%	Total *N*	%	Diff.[b]	Totals (%)	(%)	(%)	Diff.[b]	Totals (%)
Totals	184	38.0	62	41.9	–	39.0	59.2	66.1	–	60.9
Dropouts	161	32.9	54	40.7	–	34.7	54.0	63.0	–	56.3
Graduates	23	73.9	8	50.0	–	67.7	95.7	87.5	–	93.6
p[c]		3*		–		3*	3*	2*		3*
<5 months	46	13.0	21	28.6	–	17.9	36.9	47.6	–	40.3
5-12	54	25.9	17	52.9	2*	32.4	44.4	70.6	1*	50.7
>12	61	54.1	16	43.8	–	52.0	75.4	75.0		75.3
p[c]		3*				3*	3*	1*		3*
Black	130	40.8	39	46.2	–	42.0	60.5	66.7	–	62.1
Hispanic	30	33.3	9	44.4	–	35.9	51.9	66.7	–	56.4
White	19	36.8	14	28.6	–	33.0	52.6	64.3	–	57.8
p[c]		–		–		–	–	–		–
<19 years	28	35.7	17	23.5	–	31.1	50.0	47.1	–	48.9
19-26	99	40.4	36	47.2	–	42.2	64.7	75.0	–	52.6
27+	57	35.1	9	55.6	–	39.7	54.4	66.7	–	58.7
p[c]		–		1*		–	–	2*		–
Opioid	112	52.7	24	62.5	–	54.4	71.4	91.7	2*	75.0
Nonopioid	72	15.3	38	29.0	1*	20.0	40.3	50.0	–	43.7
p[c]		3*		3*		3*	3*	3*		3*

[a]Graduates deleted from time in program data, and 1 case dropped whose racial category is "other." The *N* varies because of missing data.
[b]Chi-square values.
[c]*P* values derived from chi square, testing largest differences.
[d]1*: $p < .10$.
2*: $p < .05$.
3*: $p < .01$.
4*: $p < .001$.

required abstinence from the primary drug. This tended to suppress the success rates among the nonopioid abusers. For example, 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. Other analyses, however, reveal significant decreases in the frequency of their primary drug use [3].

Conversely, though more opioid abusers achieved abstinence, their use of alcohol, marijuana, or other drugs did not yield a DrugDX. For example, a few successful opioid abusers indicated daily use of alcohol and/or marijuana. Virtually none used other substances.) However, 37% of the males and 21% of the females either drank, smoked marijuana, or did both more than 3 times a week.

Thus, while the DrugDX criteria accord with the TC's strict clinical view of success, they masked the actual extent of individual change in follow-up for both sexes, but particularly for the females. With primary drug controlled, females yielded higher success rates among nonopioid abusers and lower involvement in other drug use among the opioid abusers who achieved abstinence.

The alcohol and marijuana use among former opioid abusers, however, is difficult to interpret within the context of the social use of these drugs. Nevertheless, the positive status of these clients, males and females, was confirmed by the absence of criminality and generally improved employment.

Psychological Change

Table 5 summarizes the psychological results by success for males and females. At follow-up, 69% of the 60 scales significantly improved, but the female change was greater (Females 80.0% vs 43.3%; $p < .02$). Practically all of the improvements occurred in the two favorable success groups. The percentage of significantly improved scales increases from 12-17% in Groups 1 and 2 to 50% in Group 3 (males 28.0% vs females 25.0%). In Group 4, 78% of the scales improved (males 40.0% vs females 80.0%). Thus, among best successes, the percentages of significantly improved scales for females doubled that of the males.

Figures 1, 2, and 3 depict the psychological profiles by sex and success. Table 5 summarizes statistical comparisons at each test point. The initial profiles for men and women were similarly deviant, indicating signs of personality disorder, immaturity, emotional disturbance, and psychopathology. The clinical MMPI scales reveal prominent features of character disorder, disturbed thinking, and hypomania. On the TSC, the self-esteem segment is

Table 5. Psychological Improvements for Males and Females by Success[a]

Success groups	Males				Females				Sample totals			
			Pathol.				Pathol.				Pathol.	
	TSC (29)	MMPI (26)	IQ (5)	Totals (60)	TSC (29)	MMPI (26)	IQ (5)	Totals (60)	TSC (29)	MMPI (26)	IQ (5)	Totals (60)[b]
4	17.0	54.0	100.0	40.0	76.0	85.0	80.0	80.0	72.0	81.0	100.0	78.0
3	14.0	31.0	100.0	28.0	17.0	23.0	80.0	25.0	38.0	54.0	100.0	50.0
2[c]	10.0	0.0	80.0	12.0	*N* too small				14.0	8.0	80.0	17.0
1	7.0	12.0	20.0	8.0	7.0	0.0	0.0	3.0	10.3	12.0	20.0	12.0
Totals	20.7	57.7	100.0	43.3	75.9	84.6	80.0	80.0	51.7	76.9	100.0	66.7

Sex Differences at Time 1 (T1) and at Follow-Up (Tf)[d]

	Males								Females							
	TSC		MMPI		Pathol. IQ		Totals		TSC		MMPI		Pathol. IQ		Totals	
	T1	*Tf*	*T1*	*Tf*	*T1*	*Tf*	*T1*	*Tf*	*T1*	*Tf*	*T1*	*Tf*	*T1*	*Tf*	*T1*	*Tf*
4	13.8	0.0	0.0	0.0	20.0	0.0	8.3	0.0	0.0	13.8	7.7	61.5	0.0	0.0	3.3	33.3
3	0.0	3.5	0.0	0.0	0.0	20.0	0.0	3.3	6.9	6.9	7.7	7.7	0.0	0.0	6.7	6.7
1	0.0	0.0	0.0	3.9	0.0	20.0	0.0	3.3	0.0	0.0	3.9	0.0	0.0	0.0	1.7	0.0
Totals	17.2	0.0	11.5	0.0	40.0	20.0	16.7	1.7	0.0	34.5	8.7	61.5	0.0	20.0	3.3	45.0

[a]Percentage of scales that improved at $p < .05$.

[b]This row reflects the number of scales in the psychological battery.

[c]The few females in Success Group 2 are included in all row totals.

[d]The percetage of scales on which males were significantly better than females, or females were better than males, at each test point ($p < .05$). For example, the last column (Totals) indicates that at follow-up all females are significantly better than all males on 45% of the 60 scales. Comparisons for Success Group 2 were excluded because of the small *N* for females in this group.

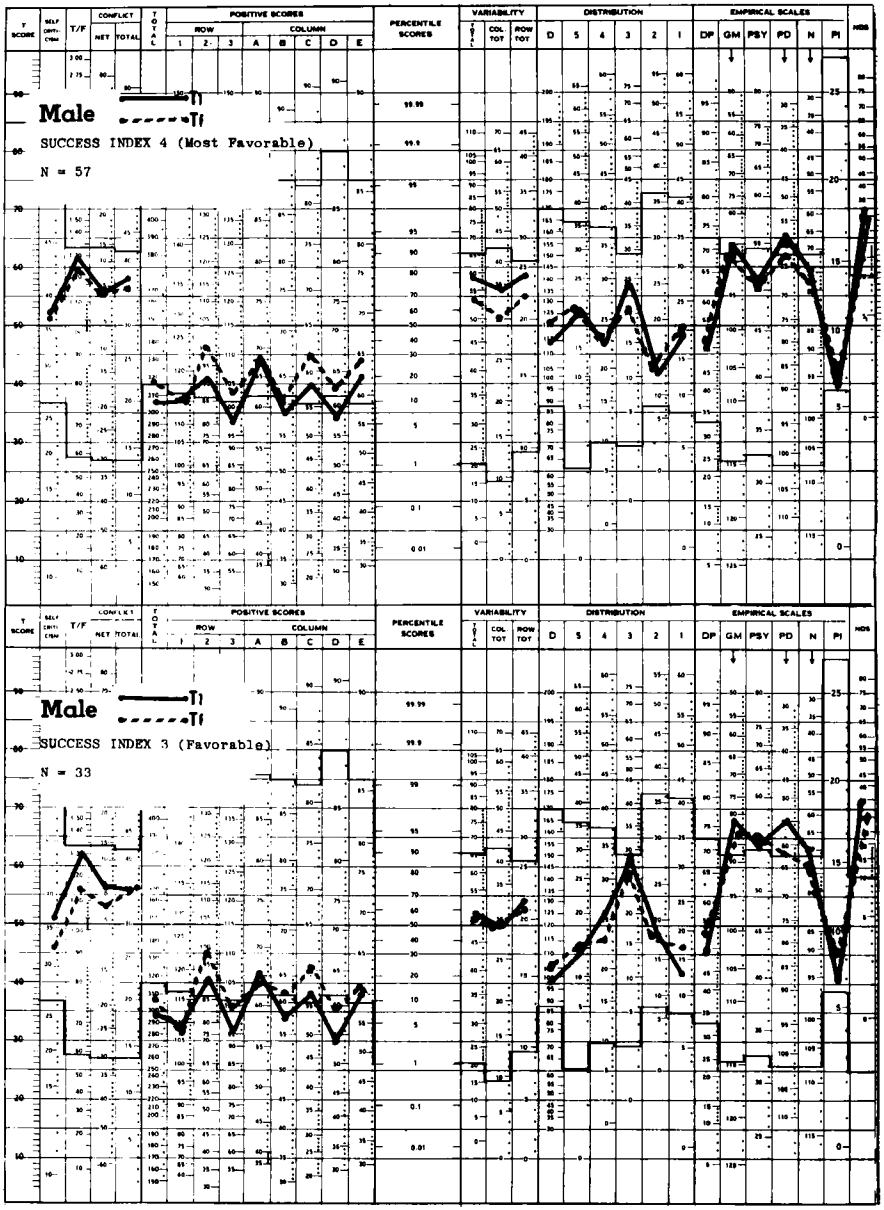

Fig. 1. The Tennessee Self-Concept in treatment (Time 1, *T*1) and again at follow-up (*Tf*), 2 years after treatment. Improvement is reflected in an elevation of the left segment (Positive Scales 1-E), and in a lowering of the right segment (Empirical Scales DP-NDS).

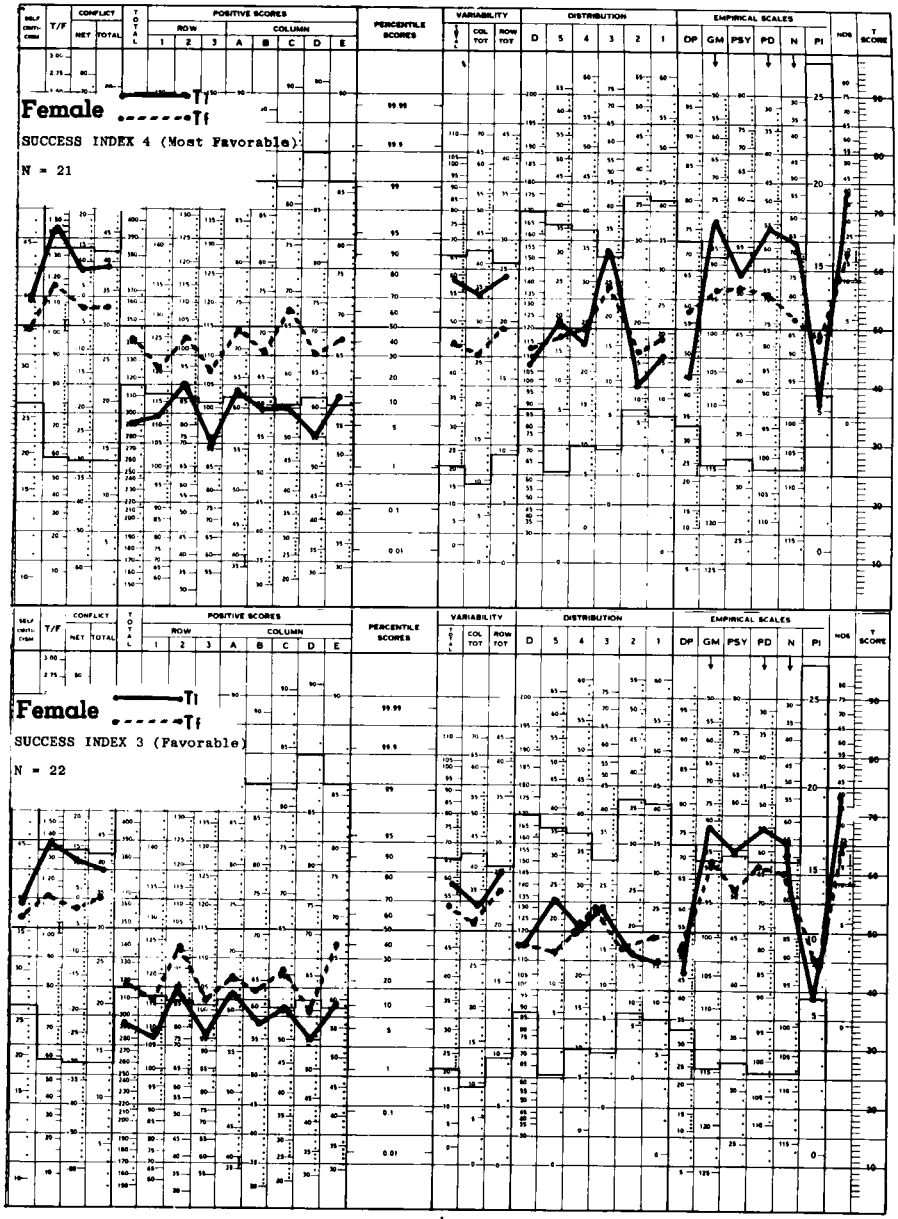

Fig. 1. (continued)

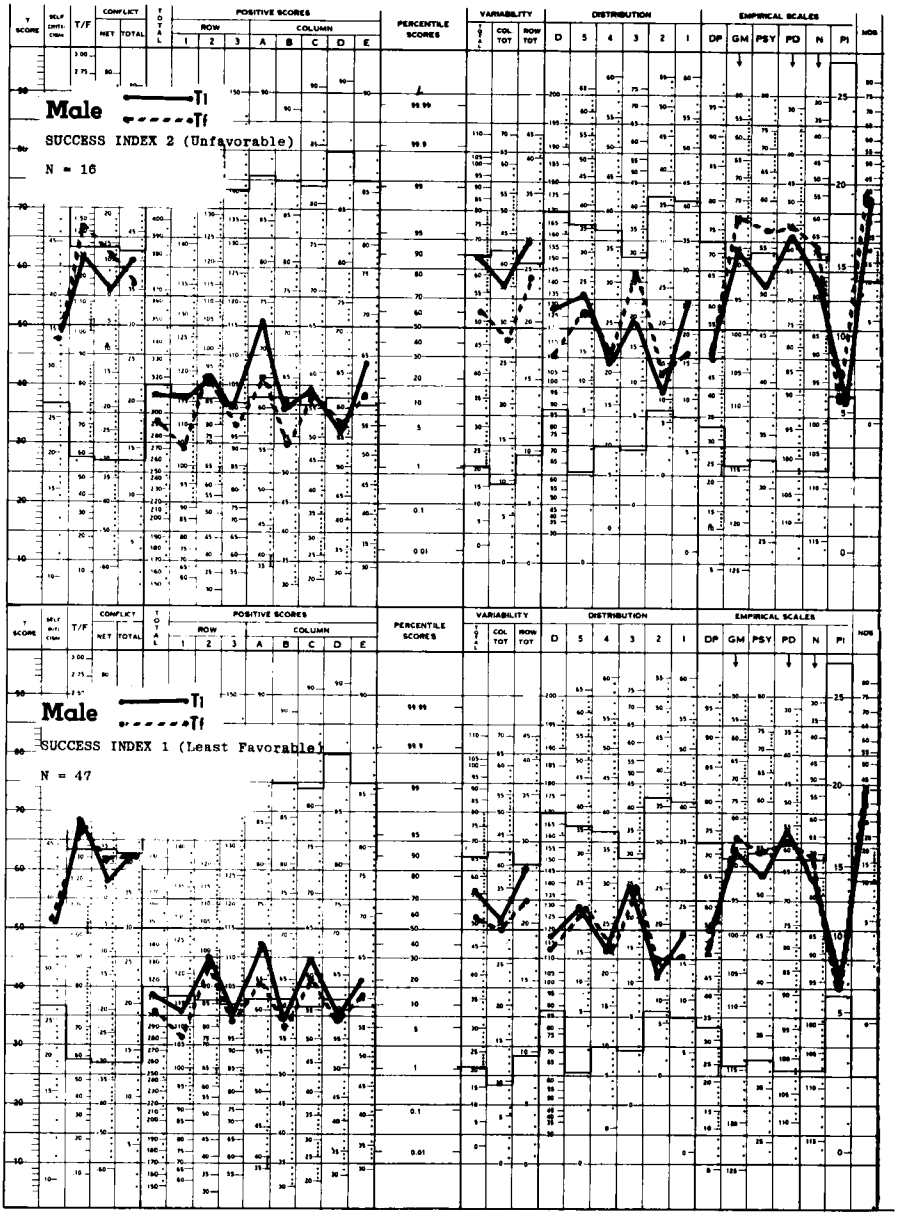

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Fig. 1. (continued)

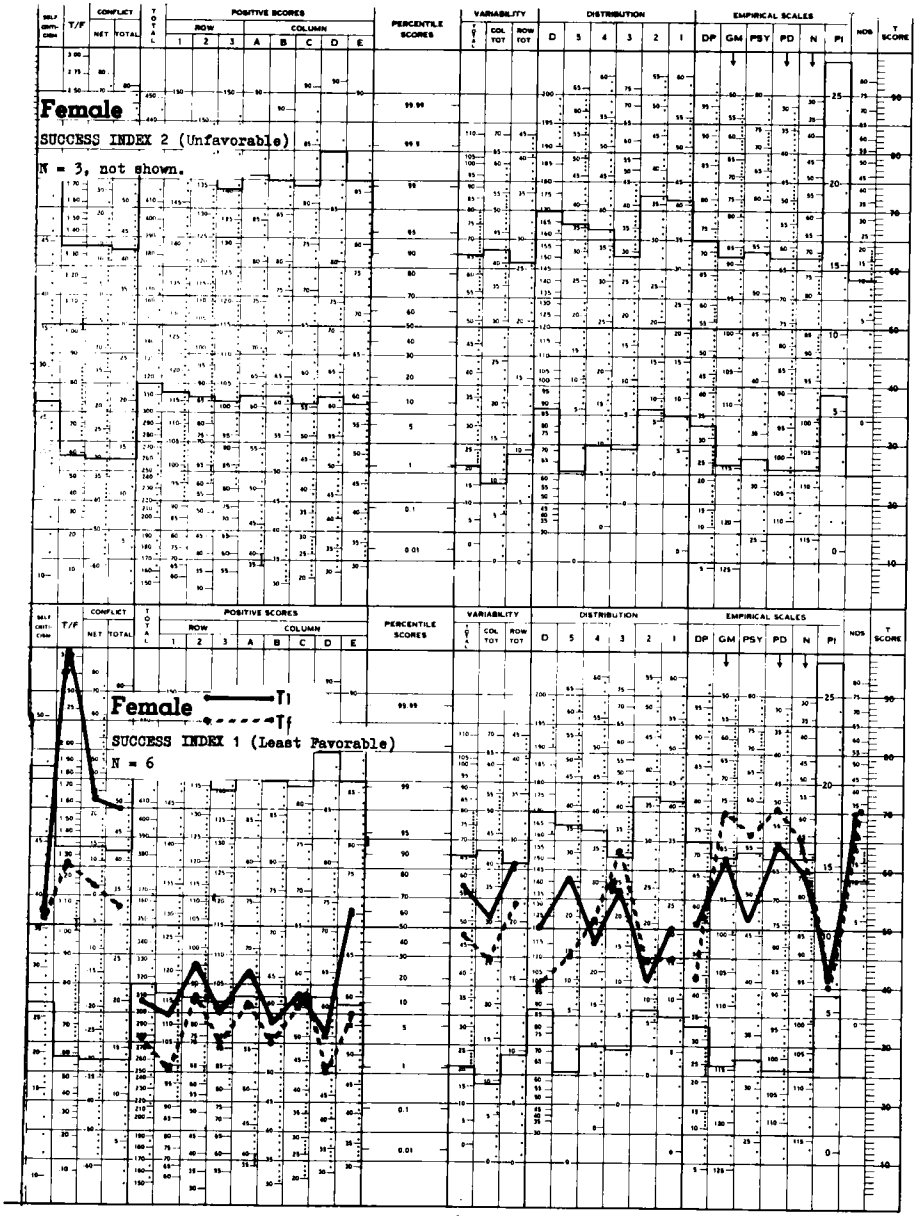
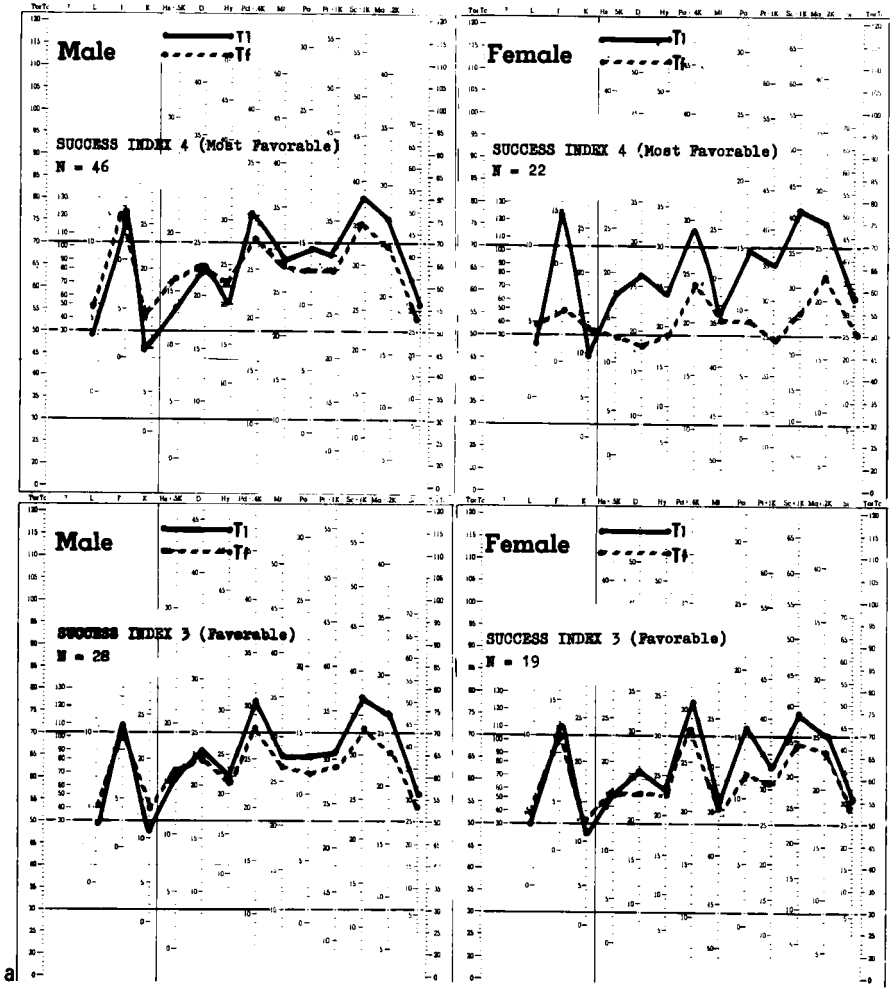
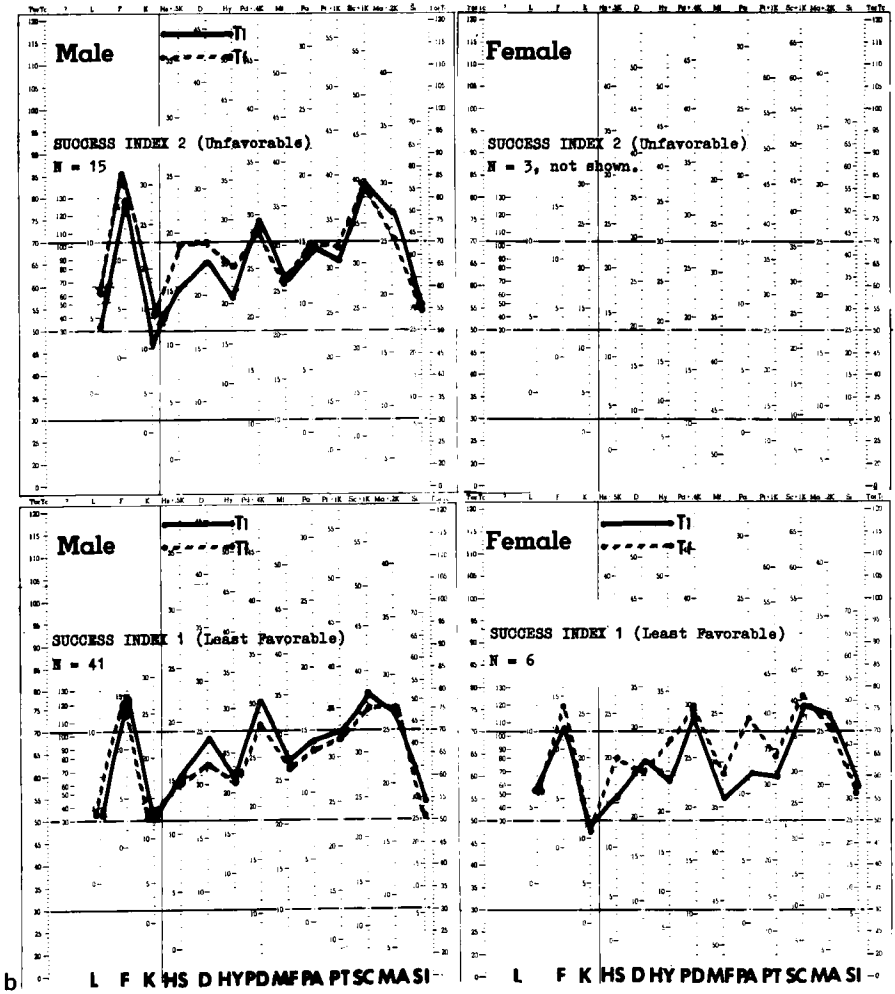


Fig. 1. (continued)



a

Fig. 2. The MMPI profiles in treatment (Time 1, *T1*) and again at follow-up (*Tf*), 2 years after treatment.



b

Fig. 2. (continued)

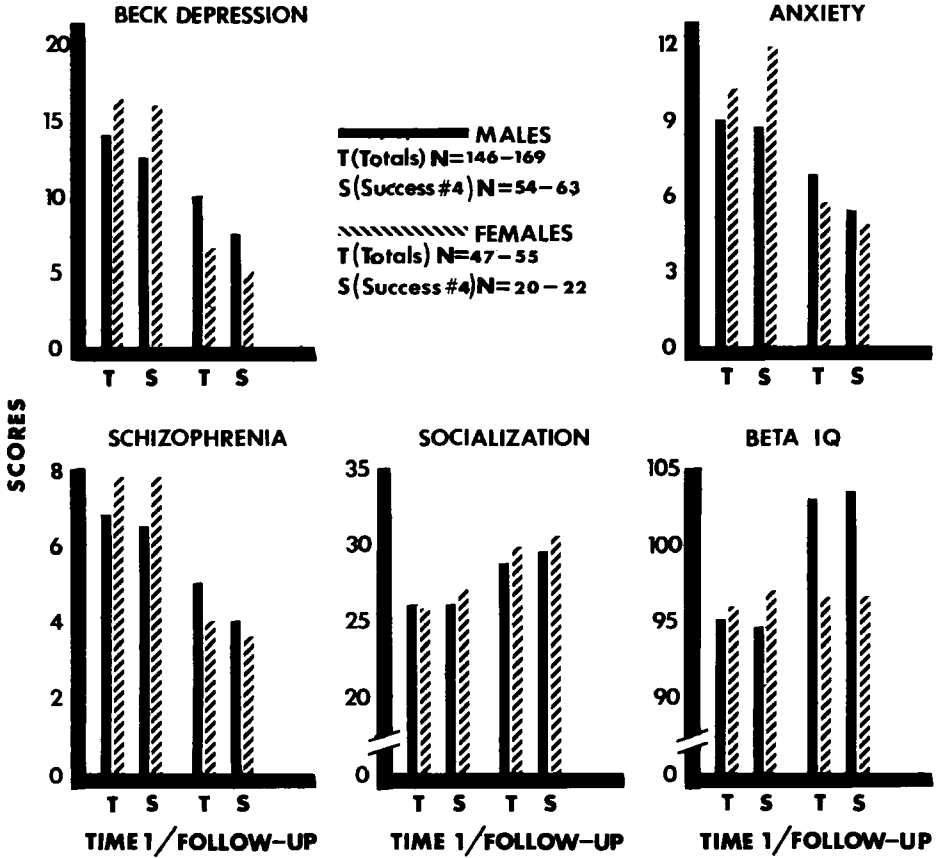


Fig. 3. The IQ and pathology scores for all males and females (*T*) and Best Successes (*S*) at initial testing (Time 1) and at follow-up, 2 years after leaving treatment. Although the maximum possible scores on each test are not scaled, the values obtained at Time 1 are deviant and generally worse for females. Follow-up scores approach normative levels for both sexes, but with the exception of IQ, females show a larger improvement.

markedly depressed, and overall maladjustment is high. Socialization is poor and intellectual function is low, reflected in the dull-normal IQ scores. Depression is in the mild-moderate range, but symptoms of emotional and cognitive disturbance are evident in the high scores on the Anxiety and Schizophrenia scales.

At follow-up, profiles are significantly improved for the males and females in the two favorable outcome groups. However, the psychological differences among the four groups were more pronounced for the females. Among the males, profiles for the favorable groups are generally better than those of the two unfavorable groups, but the differences were less apparent because of their fewer improvements. Among the females, profiles of the two favorable groups are obviously better than those of the few females in the unfavorable groups, but the large number of scale improvements resulted in profiles which also differentiated between the two favorable outcome groups. Figures 1 and 2 sharply reveal these sex differences at follow-up. Among successes, females were significantly better than males on 33% of the 60 scales.

The larger female change did not relate to initial score levels or scale interdependencies. Time 1 profiles were similar by success groups and sex, with only scattered differences noted. Females in Success Group 4 appear somewhat better than males at Time 1 on the MMPI clinical scales, but males were statistically better on several of the special scales that are not shown (Dominance, Dependency). On the TSC, females were significantly worse on the self-esteem segment and nonsignificantly worse on the maladjustment segment. On the symptom scales they yielded a significantly higher Manifest Anxiety score. Partial correlate analyses confirmed the sex differences at follow-up with the effects of these few Time 1 differences removed.

There is substantial scale intercorrelation within and between the instruments employed. This factor may have influenced the number of improved scales for both sexes, but not the differential improvement for the successful females. Among males, for example, fewer changes occurred in self-concept and personality traits compared with females, for whom changes occurred across most of the psychological domains measured.

Statistical comparisons were limited for graduate-dropout differences by success and sex. Practically all graduates were successes, and there were too few female graduates in the sample who could be followed through 2 years. Nevertheless, comparisons revealed that the sex differences obtained by success persisted in the graduate-dropout comparisons.

For example, among dropouts and graduates, improvements occurred primarily in the two favorable outcome groups. For male successes, however,

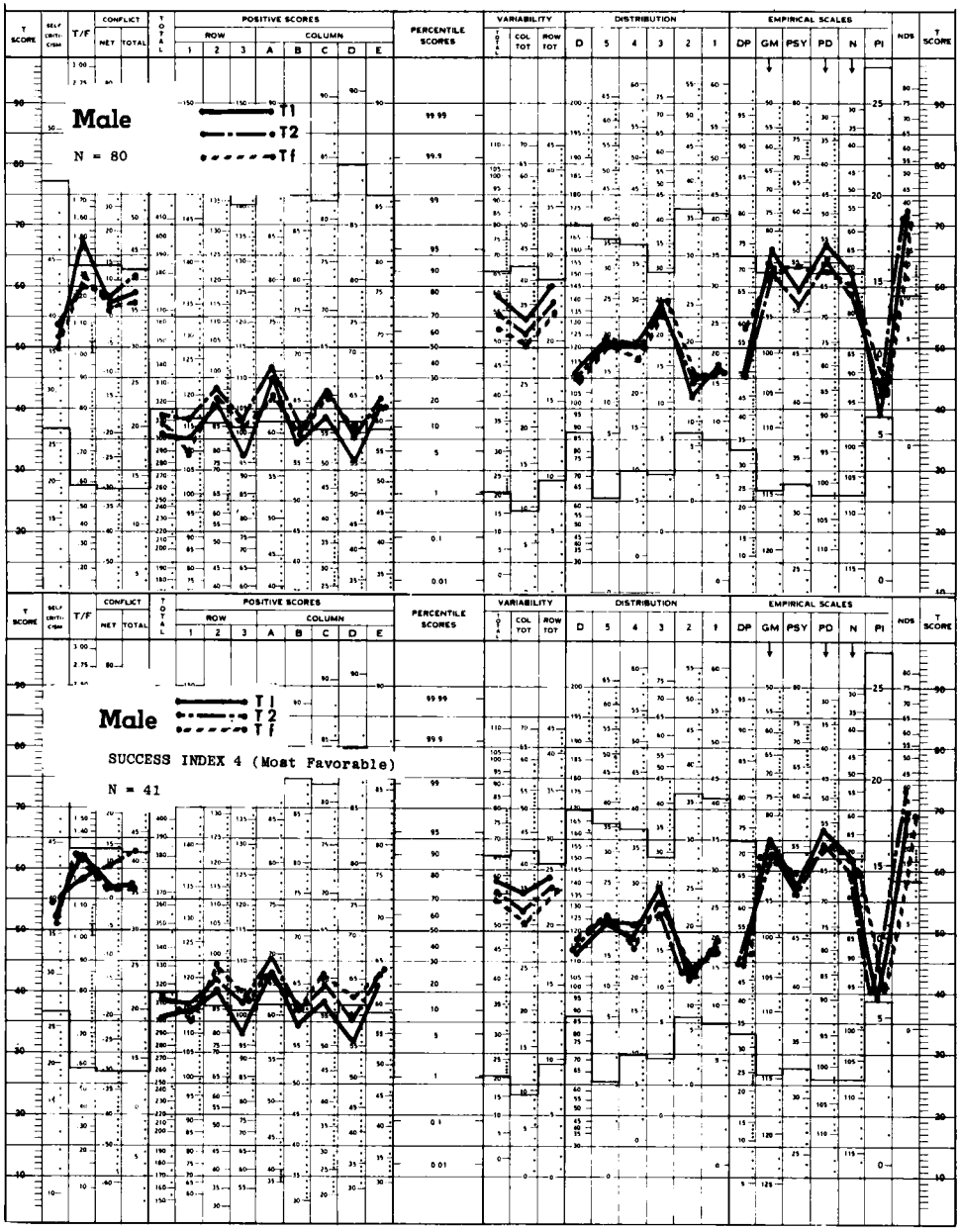
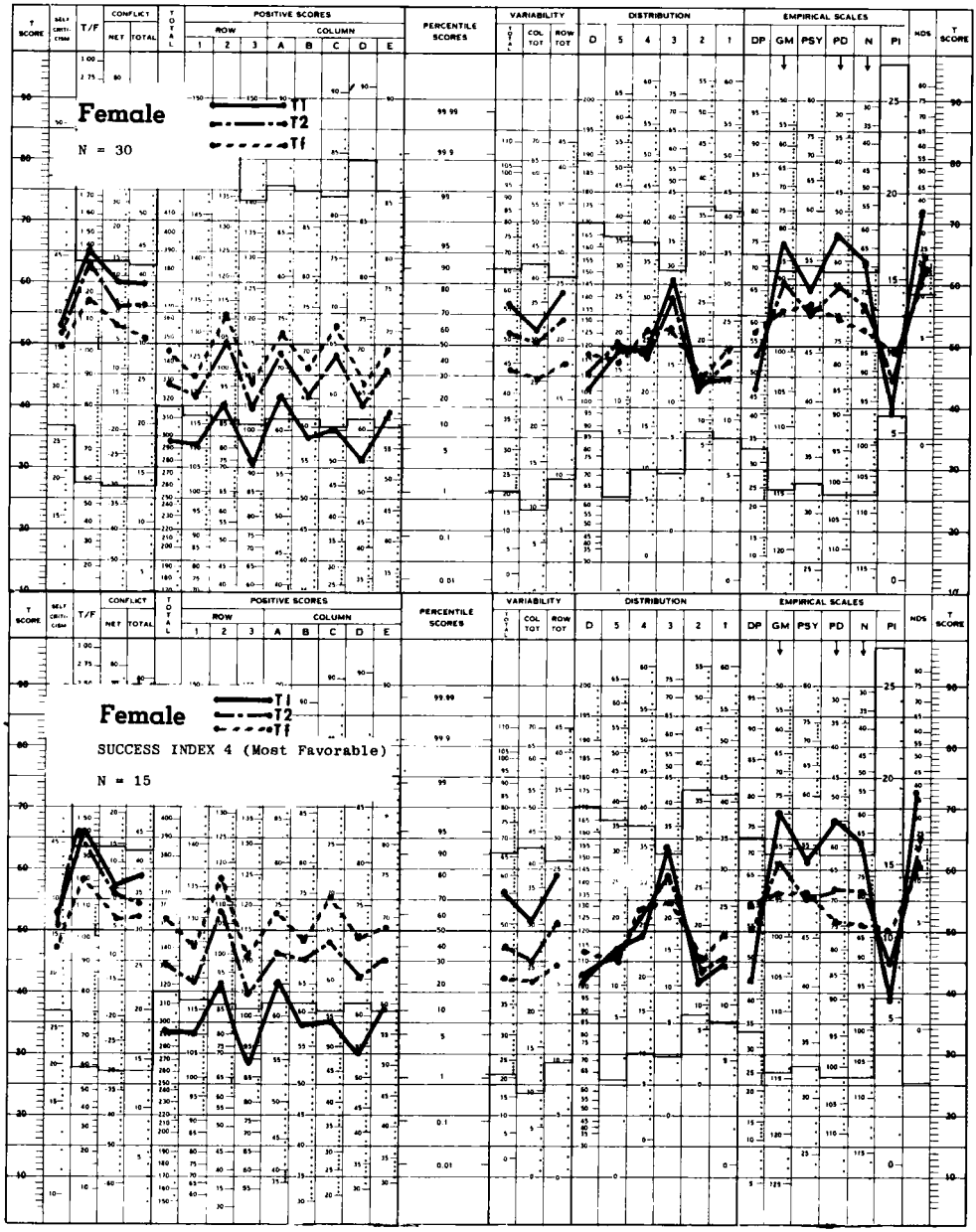


Fig. 4. The TSC profile early in treatment (Time 1, *T*1), 6 months later in treatment (Time 2, *T*2), and at follow-up, 2 years after leaving treatment (*Tf*), pooled across success groups and for best successes. For males, profiles improved moderately during treatment,



with no further gains at follow-up. Female profiles improved markedly during and following treatment, and were significantly better than males at follow-up. For both sexes, improvement occurred in the two favorable outcome groups, primarily among the Best Successes.

profiles between dropouts and graduates were not distinguishable. Among female successes, graduate profiles were distinctly better than dropouts and in fact were the best in the sample. Thus, irrespective of dropout-graduate status, the females revealed consistently better profiles.

The psychological status of the female at follow-up did not relate to age, race, or drug of abuse. Scale improvements were fairly uniform but there were notable exceptions. Fewer significant changes occurred for the youngest clients (<19), White dropouts, Black graduates, and primary alcohol abusers. Regression analyses revealed small contributions from these parameters to follow-up scores, depending upon the psychological scale. However, their effects did not significantly moderate the primary differences by sex.

Time in program was positively correlated with psychological improvement for male and female dropouts. The longest staying dropouts (17+ months) revealed the largest number of significant scale changes. Even within the best successes, the percentage of improved scales was linearly related to time in program (<5 months, 11.7%, 5-12 months, 40.0%; >12 months, 66.7%). This relationship held by sex, but more scales changed significantly among the >5 females. Thus psychological change for long-term successes was greater than for short-term successes, but particularly among the females.

Overall, then, psychological improvement occurred for both sexes in the two favorable outcome groups. Among successes, however, females revealed greater gains that resulted in significantly better psychological profiles at follow-up. These sex differences did not relate to dropout/graduate status, demography, drug of abuse, or TIP, and they persisted across most of the psychological dimensions assessed.

Psychological Change during Treatment. Did the psychological changes at follow-up relate to the treatment experience? This question was addressed indirectly in a second study that assessed psychological improvement during treatment in relation to success and psychological status at follow-up.

Analysis focused upon changes in psychological scores obtained at three points: at admission or early in treatment, 6 months later in treatment, and at 2 year follow-up. The study longitudinally followed a subsample of the four success groups, consisting of approximately 110 clients who met the 2-year criterion for TOP and who had a TSC profile Beta IQ and symptom scores. The MMPI was excluded since it was not routinely administered twice during treatment.

Results showed that among the two unfavorable groups, 1 and 2, few scales showed significant changes at any point. Of these, practically all were improvements during treatment, but half worsened at follow-up. In contrast, for favorable Groups 3 and 4, about 50% of the scales significantly changed during treatment

for both sexes. At follow-up, scores of the female successes continued to improve, but those of the male successes generally did not significantly exceed the improvement achieved during treatment (Fig. 4). Thus, successful outcome related to psychological improvement during residency for both sexes and for women, to further psychological gains at follow-up. The findings firmly implicate treatment factors in client change.

DISCUSSION

Sucess rates were primarily related to TIP for both sexes, although age and drug of abuse were also implicated in outcome. Female successes revealed a significantly shorter TIP, and though younger than males, proportionately more of their older clients were successes. Thus age-related factors (i.e., differential maturity) may contribute to female outcome, perhaps by reducing the time needed for success.

These complexities emphasize the importance of individual differences in understanding treatment outcome. Success emerges from an interaction of client and treatment elements. Individuals may be self-selected to seek, remain, and leave treatment, but it is time-correlated treatment factors that influence individual change.

That successful status was maintained across 2 years of follow-up also requires evaluation of influences other than Phoenix House. These may include the effects of later treatment or social climate factors, e.g., the availability of heroin and other drugs, law enforcement pressures, and the general economy. 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 [3, 27].

Treatments after Phoenix House did not significantly affect the success results for either males or females. About 28% of the dropouts and 0% of the graduates reentered drug treatment in the 2 years following their stay in Phoenix House. Of the best successes, only 9% reported any involvement in drug treatment. If these cases are deleted, success rates reduce by less than 4%.

Reentry into drug treatment must 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. Thus return to treatment is often viewed by clients and many clinicians as a positive sign.

The correlation between success and psychological status at follow-up accords with the TC's basic assumption about rehabilitation. Stable recovery requires long-term residency to effect an integration of the social and psychological goals of treatment. This assumption is consistently supported by the

main findings of the study: success rates were significantly related to length of stay; psychological improvement primarily occurred among the successful clients; and, even among successes, this change was greater for the longer-staying residents. Improvement during treatment also related to success and psychological status at follow-up.

The superior psychological improvement for the successful females may be interpreted in terms of sex and social role factors that are addressed in the TC, and which have been suggested in other research [10, 12, 29, 30].

Male and female drug abusers enter treatment with deviant psychological profiles. Females reveal a poorer self-concept and more emotional symptoms, but their personality traits are generally no worse than that of the males. These initial sex differences were seen in the present study, although they were not as large as previously reported [3, 12]. (This is related to the period of testing. The sample consisted of a cross-sectional distribution by time in program, with most clients initially tested several months after admission. The initial scores then reflected some improvement effect during treatment. Thus the better Time 1 scores for the sample tended to diminish the sex differences at initial testing.)

For females, the negative profile reflects a greater degree of self-stigma. Influenced by socially conditioned perceptions of female drug abuse, the female accepts the conventional view that her drug abuse is sicker or worse than the males'. Thus positive psychological change is significantly larger for women because much of the self-stigma component is removed.

For males, drug abuse does not convey the same negative social stereotype. Socially conditioned self-stigma is less relevant and, hence, its elimination does not improve the male's psychological status to the extent that it does with women.

Treatment in Phoenix House (and similar TCs) is guided by the view that male and female drug abusers share common psychological characteristics. Either as cause or consequence of their drug abuse, all reveal features of personality disturbance and impeded social function. Thus all residents in Phoenix follow the same regime. Sex differences are recognized in strategies that modify the emphasis, but not the course of the treatment experience in the therapeutic community. Specifically, sex-role stereotypes are altered in several ways. Authority and leadership in job roles, characteristically male-associated, are equally available for both sexes, but strongly encouraged for women. The female inclination toward self-castigation is countered early as an internalized social perception. Mutual sharing between men and women affirms that the psychological factors contributing to drug involvement are

individual rather than sex-role characteristics. Female-associated behaviors, e.g., dependency, weakness, and "survival through sex," are confronted and changed. In particular, both men and women are discouraged from viewing women as sex objects.

That sex role, psychological changes, and treatment influences are related, remains an hypothesis for further testing. However, some evidence for its validity is contained in the psychological results. The sex differences were least on the symptom scales and most consistent on the psychological variables that implicate social role factors.

The symptom scales measure states of affective and cognitive disturbance often associated with circumstantial stress. Early in treatment, most clients are anxious, depressed, and generally confused. Their upset usually diminishes within the structure (and security) of the TC, as seen in the improvements during treatment, reported in the present research and in other studies [3, 9, 12]. At the time of the follow-up interview, the life-style had improved for the male and female successes. They were relatively free of the circumstantial stress that marked the earlier period. This is reflected in decreased symptoms for both sexes.

In contrast, the sex differences were prominent on scales measuring more enduring social-psychological characteristics. On the TSC, the 10 subscales of the self-concept segment essentially reflect social role elements, e.g., Positive Identity, the Moral Self, and the Social Self. Although initially worse, female scores elevated significantly above that of the males on every subscale of the segment (Fig. 1).

Similarly, on the MMPI, female successes were significantly better on several of the personality traits and revealed notable changes on the subscales reflecting sex role elements, e.g., Ego Strength and Dependency. It is particularly relevant that the shape of the female MMPI profile altered toward nondeviancy while for male successes the MMPI improved but remained unaltered. Personality characteristics are presumed to develop under multiple determinants: social, psychologic, and perhaps biologic. Males and females were initially similar on the MMPI. For females, however, social role determinants appear more important since their characteristics modified under social influences during and perhaps following residency in the TC.

Several considerations caution the interpretation of the present findings. First, psychological status at follow-up may reflect the effects of intervening factors which themselves may not be free of social role elements. Unmeasured influences, e.g., family, support networks, and employment, may differentially affect males and females after treatment. Some assessment of these is provided

in a later study which describes client perceptions of the importance of non-treatment influences upon their life-style since leaving Phoenix House.

Second, correlational analyses, even those that have yielded the present powerful findings, do not extract a specific treatment influence. Studies that directly relate program process to client change would increase the certainty of conclusions concerning treatment effectiveness.

Third, sampling factors could have influenced the results. Those who seek treatment may not be representative of drug abusers in general. Though present for both sexes, this bias could be larger for the females since fewer women enter or remain in residential treatment. Without untreated control groups, however, the extent of this bias cannot be estimated in the present research.

The sample did differ from the Phoenix House population since it was weighted toward longer-staying residents. Thus it may be overrepresented by clients already in treatment who are self-selected to remain in treatment, succeed, and improve psychologically. As noted earlier, however, there were no sampling differences by sex, except that more females provided a completed interview. Compared with the Phoenix population, initial psychological scores were somewhat better for the sample. This, however, related to the later time of initial testing in treatment for both sexes, and would not explain the better follow-up scores for the females.

Thus far, then, there is little evidence that the females were a unique sample compared with the males who were followed. However, this issue awaits examination of a wider range of client background variables.

The extent to which the present findings can be generalized remains to be clarified. Follow-up studies have not been reported with the design and measures of psychological and success status utilized in the present research. Precise comparison with the few investigations that have employed a composite index of success are impeded by differences in the construction of the index and in criteria for success [26, 31]. Moreover, generality may be limited by program variability. Differences in philosophy, resources, clinical and management experience, as well as outcome criteria, all may affect treatment effectiveness and, hence, success rates across programs [2].

Phoenix House, however, is not unlike other traditional TC programs in the client it serves. For example, the psychological, demographic, and retention characteristics of male and female Phoenix clients closely resembled those in a consortium of seven TCs described in recently completed research [9]. The present findings, then, provide sound hypotheses for research in these and other similar treatment settings.

The issue of generality emphasizes some important limits in this and other research on success or global outcome. The success and improvement results describe a narrow band of clients who met particular behavioral and temporal criteria. They do not reflect treatment impact or change among the wider variety of clients who, by definition, were nonsuccesses. Although 60% of the sample improved under the present criteria, these rates describe gross changes in status that were continually maintained. Measures of frequency and extent were not included to assess degree of behavioral change, nor were various temporal patterns of outcome delineated, e.g., intermittent successes. Similarly, the psychological results do not provide a complete picture of client adjustment.

Thus sophisticated indices are needed to more fully capture the extent and diversity of individual change and, in addition to psychological dimensions, social drug use, family and interpersonal relations, and other quality-of-life variables must be incorporated to portray the "health" or adaptation of the successful individual.

These limits notwithstanding, the firm association between success and psychological adjustment provides impressive evidence for the effectiveness of the TC in the treatment of substance abusers. The female improvement, particularly in psychological status, contradicts the presumption that the TC is inappropriate for women. Moreover, it contains a broader implication for treatment of female substance abusers within and outside of the TC. For women, emphasis upon positive changes in social role could facilitate their achieving significant psychological and social adjustment.

ACKNOWLEDGMENTS

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