

National Institute on Drug Abuse

# SERVICES RESEARCH REPORT



## Followup Evaluation of Drug Abuse Treatment: A Summary Report

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The Services Research Reports and Monograph Series are issued by the Services Research Branch, Division of Resource Development, National Institute on Drug Abuse. Their primary purpose is to provide reports to the drug abuse treatment community on the service delivery and policy-oriented findings from Branch sponsored studies. These will include state-of-the-art studies, innovative service delivery models for different client populations, innovative treatment management and financing techniques, and treatment outcome studies.

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# FOLLOWUP EVALUATION OF DRUG ABUSE TREATMENT: A SUMMARY REPORT

## Introduction

Generally, data information systems are designed to accomplish two separate purposes--program monitoring and management, and evaluation research. The large majority of data in most State drug treatment management information systems today is oriented toward the first of these, program management. These data serve an important function in the monitoring of client flow, treatment services, budgets, etc. for the review and planning of drug abuse treatment programs. This information also provides a basis for making useful descriptive tabulations of the client background and drug use history, treatment retention, cause of termination, and client status at discharge for making comparisons between different treatment programs or across time periods.

The second type of data system involves a shift of emphasis to treatment effects and outcomes. Evaluation research on treatment effectiveness is concerned with the explanation of results obtained by treatment programs and requires that client performance indicators be specified and examined in relation to client background and treatment process variables. Both during-treatment and post-treatment followup data are involved in the full cycle of evaluation research.

The present paper focuses on evaluation research, and particularly the use of followup techniques in treatment evaluation. The purpose will be to provide a brief overview of the research strategy and results to date of a long-term project for evaluating treatment effectiveness, based on the Drug Abuse Re-

porting Program, by the drug research staff group at the Institute of Behavioral Research, Texas Christian University. The full text of the IBR report is available through the Services Research Branch, National Institute on Drug Abuse, Rockville, Maryland 20857.

## The Drug Abuse Reporting Program

The Drug Abuse Reporting Program (DARP) was established as a patient reporting and tracking system, supported by the National Institute on Drug Abuse (NIDA)--previously by the National Institute of Mental Health--to provide a data base for the evaluation of drug treatment programs. The DARP was a system for monitoring patients entering drug abuse treatment programs from admission to termination. It involved the maintenance of a computer file of Admission and Status Evaluation Records on individual patients, submitted by participating treatment agencies throughout the United States which were federally supported. The Admission Record was essentially a patient history, providing family background, social, educational, employment, drug and alcohol abuse, and criminality information on each patient, obtained at the time of admission. The Status Evaluation Record was a bimonthly report of patient status, up to the time of termination, providing information on treatment delivered and patient behavior with respect to residence, family relations, employment, drug abstinence and abuse, alcohol use and abuse, financial support, arrests, and time in jail during each 2-month report period.

All reports were coded and entered in a computer file as received from each agency. Name, address, and all other identifying information were excluded to protect the privacy of the patients who were identified only by agency case numbers. Individual patient files were maintained continuously, even in the event of readmission by the same agency after one or more terminations.

Data were collected on approximately 44,000 clients admitted to treatment at 52 agencies throughout the United States and Puerto Rico. Admissions were recorded between June 1, 1969 and March 31, 1973, and bimonthly Status Evaluation Records for each client up to the point of termination from treatment were continued up to March 31, 1974.

Admission cohorts were defined as groups of individuals admitted to treatment during the same time period. Admission Cohort 1 was admitted during the period June 1969 to May 1971, Cohort 2 was admitted June 1971 to May 1972, and Cohort 3 consists of admissions from June 1972 to May 1973. In August 1974, followup studies of samples of the first two admission cohorts were authorized, and the field work was completed between March 1975 and October 1976. Followup of the third cohort is presently in progress. The Cohort 1 and 2 sample included a total of 4,107 out of 25,117 former clients (16 percent). Eighty-seven percent of the sample was located; 77 percent was interviewed, 6 percent was deceased, 1 percent was out of the country, and 3 percent refused the interview. Thus, there was a total of 3,131 completed interviews from 25 different DARP treatment programs across the United States and Puerto Rico.

Followup interviews were conducted face-to-face by trained interviewers. The interview focused on client behavioral factors including living arrangements, employment, criminality, drug use, alcohol consumption, and return to treatment. Data for these selected behavioral factors were obtained retrospectively on a monthly basis for the post-DARP treatment period up to the point of the followup interview.

The information obtained in the followup interview, along with background records previously completed for each person at the time of admission to treatment in DARP and bimonthly Status Evaluation Records completed throughout the duration of treatment, comprised the data base for the followup studies. The sample design and data collection proce-

dures are described in detail by Simpson and Joe (1977).

## Outcomes of the First Year After DARP

The following discussion summarizes recent data on the followup evaluation of Cohorts 1 and 2. The analyses presented are based on a subset of 2,178 black and white males which included clients in each of the five DARP treatment groups represented--MM (outpatient methadone maintenance), TC (residential therapeutic community), DF (outpatient drug free treatment), DT (outpatient detoxification), and IO (intake only). The IO group included individuals who completed the intake/admission process, but did not return for treatment; this is viewed as a comparison group that received no DARP treatment, but not a control group because random assignment was not practiced by the participating DARP agencies. Descriptive data on the sample by type of treatment modality are shown in table 1.

### CHANGES FROM PRE-DARP TO POST-DARP

Drug use (opioid, nonopioid, marijuana, and alcohol), employment, and criminality indicators were compared before and after DARP treatment (see figures 1, 2, and 3). Statistically significant improvements were generally found for the MM, TC, and DF groups, but not for the DT and IO groups.

- Opioid use decreased in all groups, but more so in MM and TC
- Nonopioid use decreased in MM, TC, and DF
- Marijuana use increased in MM.
- Alcohol use increased in all groups except DF although not to problem dimensions
- Employment increased in MM, TC, and DF
- Arrest rate decreased in MM

### COMPARISONS BETWEEN DARP TREATMENT GROUPS

Group comparisons were made for drug use, employment, incarcerations in jail, and treatment reentries in the first year post-DARP. The data were statistically adjusted to control for group differences in demographic, background, pre-DARP treatment history,

**TABLE 1.**—Followup sample of 2,178 black and white males

	DARP Treatment Classification					Total
	MM	TC	DF	DT	IO	
<b>Ethnic Group:</b>						
% Black	53	47	45	50	51	50
% White	47	53	55	50	49	50
<b>Age at DARP Admission:</b>						
Mean age	27	24	23	26	24	25
Standard Deviation	7.7	6.7	5.9	6.7	6.7	7.2
<b>Pretreatment Drug Use:</b>						
% Daily opiate use only	38	24	24	40	38	31
% Daily opiate use plus nonopiates	46	37	24	40	32	39
% Less than daily opiate use plus nonopiates	8	22	17	12	15	15
% Nonopiate use only	3	11	15	7	9	9
% Drug use not reported	5	6	10	1	6	6
<b>Days in DARP Treatment:</b>						
% None	0	0	0	0	100	7
% 1-30	5	23	21	46	0	16
% 31-90	12	20	34	44	0	19
% 91-180	21	17	22	7	0	17
% 181-360	21	17	13	3	0	16
% 361-720	26	20	9	0	0	18
% > 720	15	3	1	0	0	7
<b>Type of Termination:</b>						
% Completed treatment	12	23	13	16	0	15
% Expelled or quit	66	71	82	81	100	73
% Referred or other	22	7	5	3	0	12
<b>Number of Persons</b>	821	735	289	174	159	2178

and baseline variables.\* By holding these variables constant the influence of DARP treatment is better reflected. The results are shown in figure 4. These data indicate that MM, TC, and DF groups (especially TC) tended to have significantly more favorable outcomes than DT and IO.

- MM, TC, and DF had lower opioid and nonopioid use and higher employment than DT and IO;
- TC had the lowest marijuana use, but none of the groups differed on alcohol use;

- TC and DF had the lowest rate of return to drug treatments;
- MM had the lowest rate of incarcerations in jail.

Examination of reported treatment experiences before DARP showed that 60 percent of the followup sample had no previous treatments; 69 percent of the DF group reported no such treatments, compared to 57-60 percent in the other four groups. In the first 3 years after DARP, 51 percent of the followup sample reported at least one reentry to drug treatment,

\*Background and baseline measure data were taken from Admission Records. Background information includes factors such as criminal history, age at first involvement with illicit drugs, family responsibility, employment, socioeconomic status of parents, and education. Baseline data cover the 2 months immediately preceding admission to DARP treatment. The measures represent illicit drug use, alcohol consumption, illegal activities, and employment.

Figure 1.—Alcohol and illicit drug use before and after DARP treatment for each treatment group. (Asterisks denote groups with statistically significant changes,  $p < .01$ .)

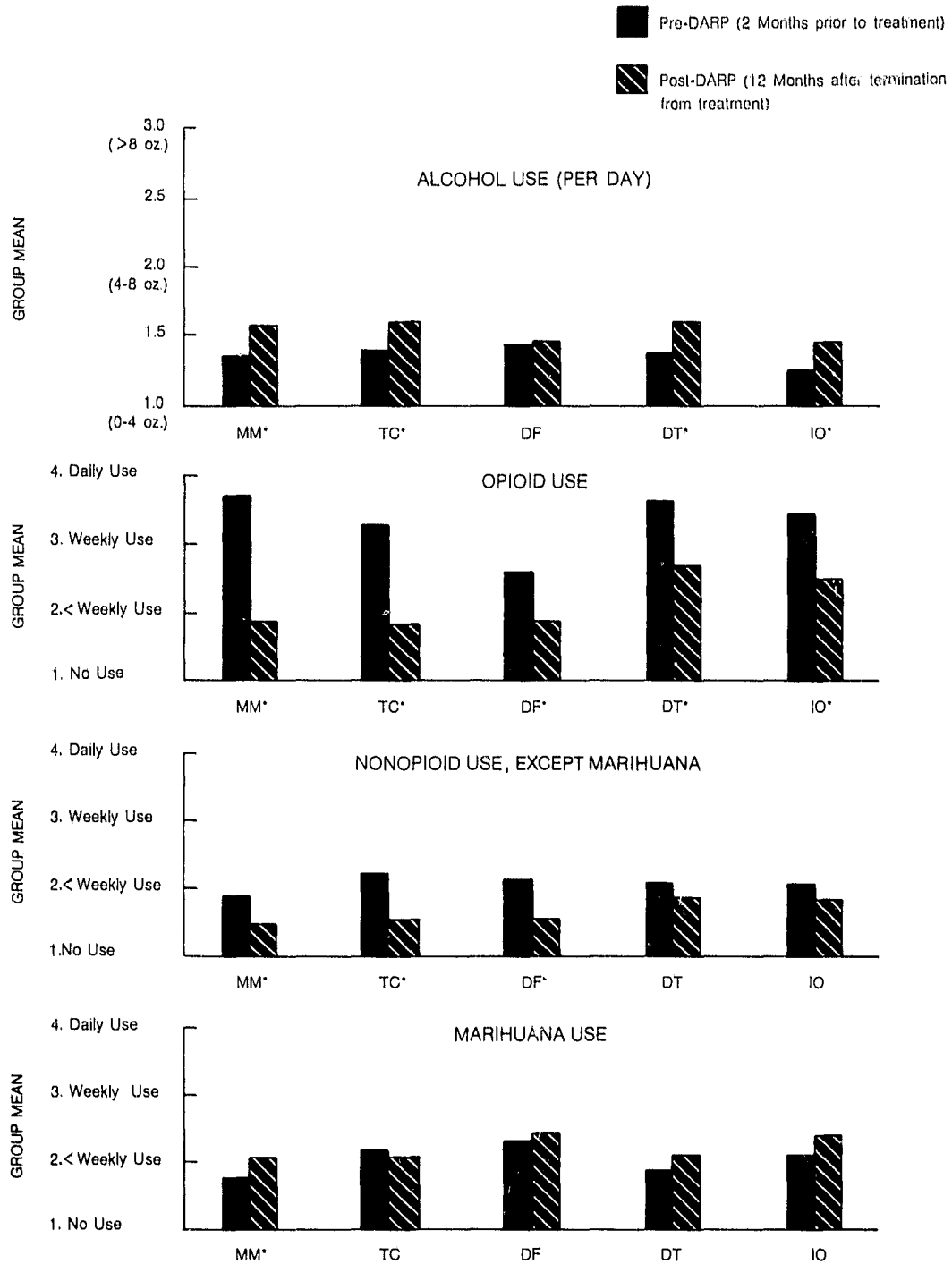
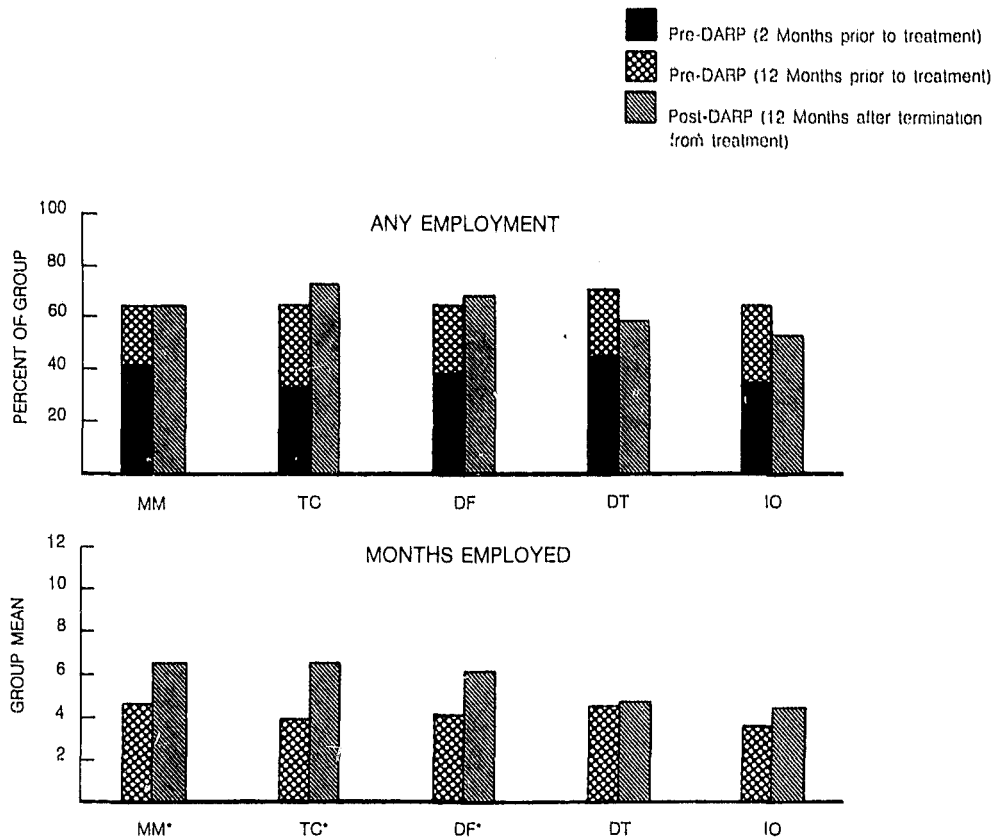




Figure 2.--Employment before and after DARP treatment for each treatment group. (Asterisks denote groups with statistically significant changes,  $p < .01$ .)



and 28 percent (of persons not in jail when interviewed) were in treatment at the time of the followup interview. Post-DARP treatment reentry rates were lowest for DF and TC, and highest for MM, DT, and IO. It was also found that from the date of admission to DARP to the date of the followup interview, the DARP MM group had an average of 51 percent of their total months in which some type of drug treatment was received; for each of the other four groups it was only 23-30 percent.

#### FACTORS ASSOCIATED WITH FAVORABLE TREATMENT OUTCOMES

A hierarchical regression analysis within each DARP treatment group was used to examine outcomes in the first year post-DARP in relation to client demographic variables, back-

ground factors, pre-DARP treatment history, criterion baseline factors, and during-DARP treatment performance. Favorable scores on the general index of during-treatment performance (Social Deviance\*) and longer tenure in treatment were found to be predictive of favorable post-DARP outcomes for DARP MM, TC, and DF clients; these during-treatment variables were not applicable for the short-term DT and IO (no DARP treatment) groups. Scores representing low background criminal history were also related to favorable composite outcomes in every group except TC, and even in TC they were related to the specific outcome measure representing jail. Thus, the criterion performance during DARP treatment--especially the general index of deviancy in treatment and length of time in treatment--and a background index of criminal history were most consistently related to favorable

\*Components of the Social Deviance index consisted of measures of illicit drug use, alcohol use, criminality, and employment.

Figure 3.—Criminality indicators and drug treatments before and after DARP treatment for each treatment group. (Asterisks denote groups with statistically significant changes,  $p < .01$ .)

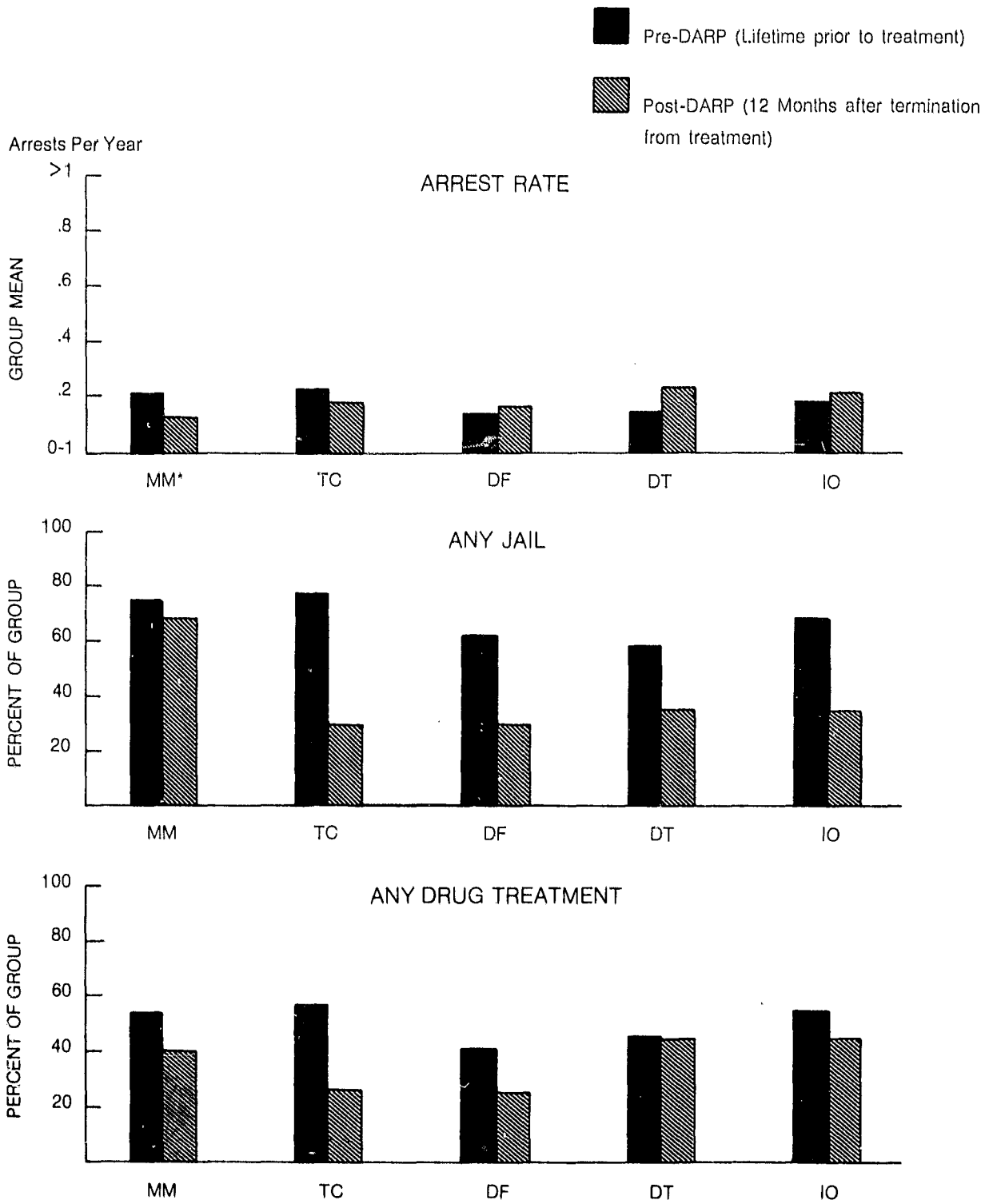
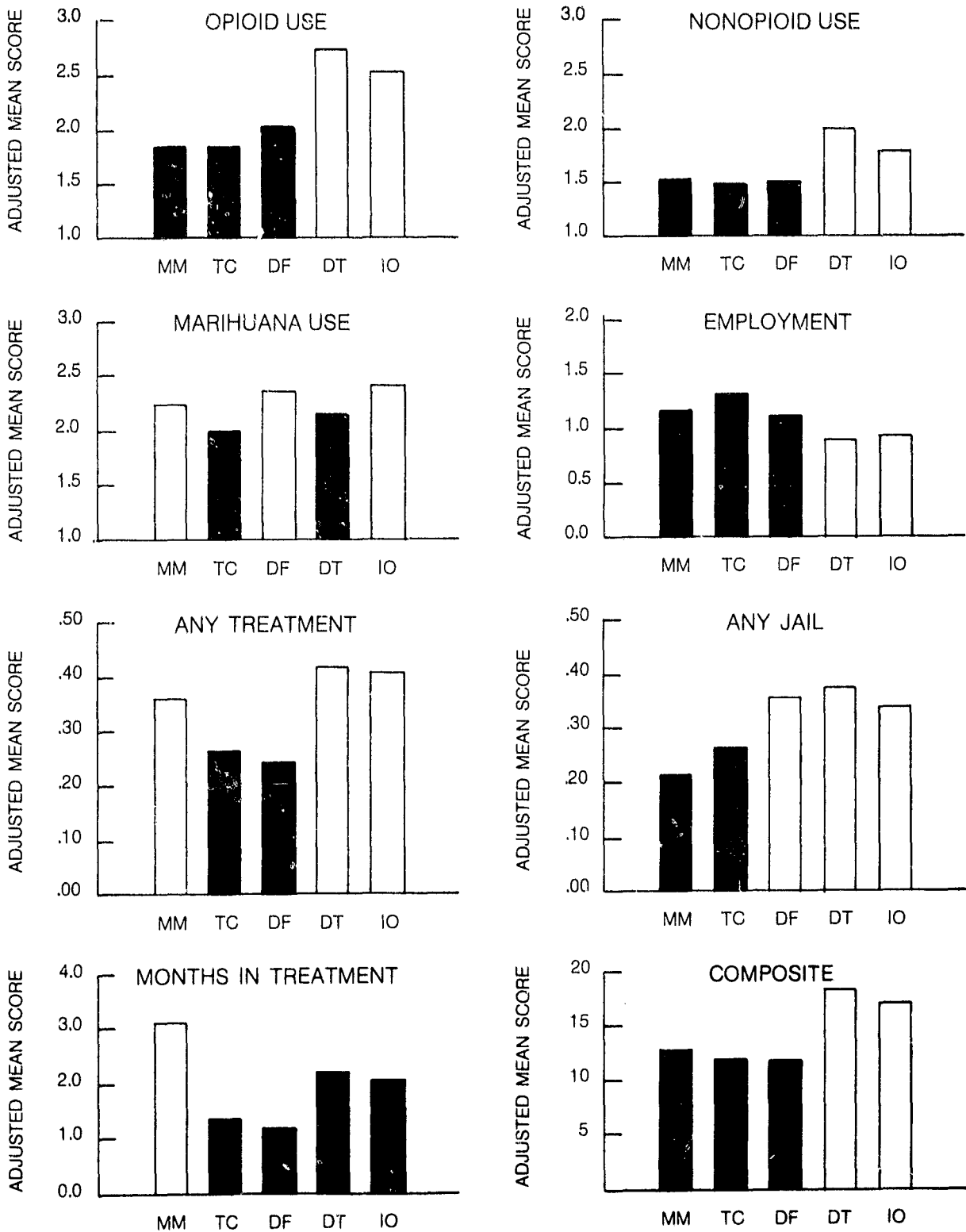


Figure 4.—Relative standings on adjusted Post-DARP outcome measures for DARP treatment groups. (Groups with the black and white shadings were significantly different from one another,  $p < .01$ , while groups with gray shading did not differ significantly from any other group.)



post-treatment outcomes in the major DARP treatment modalities.

## Implications of Findings

The DARP followup studies for Cohorts 1 and 2 have shown general improvements on the major criteria from pre-DARP to the first year post-DARP for the DARP MM, TC, and DF clients. The evidence was essentially negative for the DT and IO (no DARP treatment) clients, who showed generally smaller and nonsignificant improvement or no change at all.

In view of the population differences among the five DARP treatment groups, direct group comparisons of post-DARP outcomes were regarded as inappropriate and adjustments were made to control statistically for pre-DARP characteristics. The results of these procedures clearly indicated that post-DARP outcomes were generally quite favorable for the treatment modalities MM and TC; they were moderately favorable for DF; and less than favorable for the DT and IO groups.

Some interesting differences were found between MM and TC on specific criteria, but the judgment concerning which group had the "best" outcomes depends on subjective factors and is not entirely an empirical matter. The goals and philosophies of these treatment modalities are substantially different in many respects, and decisions concerning their relative success, based on outcome data, are dependent on the ideological positions and values of the reader. Using the most rigid criteria, including drug abstinence and no return to drug treatment, the TC group would probably be selected as having the most successful outcomes. On the other hand, these criteria

are not universally accepted among advocates of methadone maintenance treatment. There are respected professionals in the field who do not view return to drug treatment and occasional drug use with the same negative connotations. The DT and IO groups were rather clearly identified as having the poorest outcomes, but the choice of the group with the best outcomes is much more difficult.

In order to identify factors that influenced outcomes independently of treatment, two studies were undertaken with the DARP follow-up data. In one of these, Simpson et al. (1977) computed hierarchical multiple regressions on individual criteria for the first year after DARP. In the other, Demaree and his group (Hornick et al. 1977) computed multiple discriminant analyses to identify factors that discriminated 11 outcome groups, based on data for the first 3 post-DARP years. These studies independently arrived at approximately the same conclusions with the factors identified. In general, it was found that individual criminal history is a strong predictor of outcome; those who had little or no criminality prior to treatment tended to have the most favorable outcomes and those with high criminal backgrounds tended to have the most unfavorable outcomes. The pre-DARP baseline factor composed of measures for opioid use and unemployment, as well as criminality prior to admission, showed a similar relation to outcomes. In addition, background measures of family-social responsibility (including employment and responsibility for dependents) and socioeconomic status of parents were also related to outcomes. For whatever causal explanations may be involved, the evidence clearly suggests that successful performance during treatment predicts more successful posttreatment outcomes.

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