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TREATMENT PROCESS IN PRISON THERAPEUTIC COMMUNITIES: MOTIVATION, PARTICIPATION, AND OUTCOME

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ABSTRACT

Although the largest effects of prison-based therapeutic community (TC) programs are associated with entry into aftercare, only a minority of prisoners volunteer for these aftercare programs. The study addresses the gap in our knowledge concerning these low rates of voluntary entry. A theoretical formulation of the TC process involving the effect of the interaction of clients' motivation and participation in the activities of the TC on entry into aftercare was tested on a sample of 110 volunteers in a prison-based TC for whom there were client and staff ratings of 3-month participation and 12-month follow-up data on relapse and recidivism. Path analyses support a model in which the interaction of motivation and 3-month participation ratings have a direct effect on the selec-

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tion of aftercare, and aftercare has a direct effect on relapse and recidivism. The use of a combination of enhanced motivation and early program participation as a means of increasing the utilization and effectiveness of aftercare is discussed.

Recent evaluation studies of prison-based substance abuse treatment programs have shown that the greatest benefits are associated with continued treatment in postprison aftercare (1, 2) or work release (3). These same studies, however, found that the majority of inmates completing prison therapeutic community (TC) treatment choose not to enter aftercare (2). Thus, much of the potential benefits of prison-based treatment are lost.

Currently, little is known about the variables responsible for entry into aftercare. In community-based programs, dynamic variables such as motivation have been consistently associated with entry and retention in treatment (for reviews, see Refs. 4 and 5). Recent interpretations of the role of motivation in long-term retention have emphasized the interaction between motivation and the treatment process. Simpson and associates (6, 7) have proposed a model for substance abuse treatment process in which motivation influences treatment process, and process determines treatment outcomes. In accord with the model, motivation has been found to affect engagement in treatment, a variable that includes attendance, cooperation, and dependability (1, 7–9).

Additional research documents the relationship between motivation and various indices of the treatment process, such as the quality of therapeutic relationships (6). For example, motivation is correlated with more favorable perceptions of counselor competence and support from peers (10). Consistent with this theoretical model, cognitive strategies designed to improve motivation have been shown to lead to increased engagement in treatment, including commitment to treatment and the strength of the therapeutic relationship between client and counselor (9, 11, 12).

A theoretical formulation of the TC treatment process has recently been outlined (13–16) that further elaborates the interaction between motivation and the treatment process. Briefly, all of the activities of the TC, both formal and informal, are viewed as interrelated interventions that address the multidimensional disorder of the ''whole person.'' These activities include the educational and therapeutic meetings and groups and the social and interpersonal activities of the community. Participation in the activities of the TC facilitates the change process. Social and psychological change evolve as a dynamic interaction between the individual and the peer community, its context of activities (i.e., interventions), and expectations for participation.

Within this formulation, there is a continuing interaction between motivation and participation. Motivation affects the extent of participation, participation

enhances the interaction between the individual and the community that results in positive change, and these positive changes increase the motivation to participate further in the treatment process. The formulation extends the earlier model proposed by Simpson and associates (6, 7) by postulating a feedback loop between motivation and treatment process in which higher motivation leads to greater participation, participation leads to progress, and progress sustains higher motivation.

The model is consistent with the finding of long-term effects of motivation measured at admission to TC treatment in community and prison-based settings. De Leon et al. (17) found that a motivational instrument (the CMRS, the Circumstance, Motivation, Readiness, and Suitability Scales) designed to predict 30-day retention in residential TC treatment also predicted 1-year retention, with high scorers more than twice as likely to remain in treatment for the year than low scorers. Survival analysis showed that the 1-year findings were not simply due to the initial differences in retention rate between the high and low scorers. A second study using the CMR (a shortened, factor-based version of the CMRS) with prison inmates also showed long-term effects of motivation on retention (18). In this study, motivation measured at entry into a prison-based TC predicted the choice of aftercare 1 year later. The long-term effects of a dynamic variable such as motivation on the decision to remain in treatment suggests an interaction with treatment that sustains the effect of motivation over time.

The present study provides a direct test of the TC theoretical formulation proposition that motivation interacts with participation in treatment to influence the continuance in treatment, and that continuance, in turn, determines treatment outcomes. The study tests two models, a recidivism model and a relapse model. In both models, the interaction of motivation and 3-month participation in treatment mediate the choice of aftercare among volunteers completing prison TC treatment. In the recidivism model, entering aftercare is then responsible for lower rates of recidivism. In the relapse model, entering aftercare brings about lower rates of relapse.

METHOD

Treatment Program

The research took place at the Amity prison TC located in a 200-man housing unit at the R. J. Donovan medium security Correctional Facility in San Diego, California. (See Refs. 19 and 20 for detailed program descriptions.) The daily activities of the TC took place in two trailers located near the housing unit. The program was based on the traditional community TC model and employed indi-

vidual and group counseling, staff role modeling, the use of peers as therapeutic agents, and educational, vocational, and life skills training (13, 21, 22).

The program consisted of three treatment phases. The first phase consisted of an orientation period encompassing the first 2 to 3 months of the treatment. This was followed by the primary treatment phase, which occurred over the next 5 to 6 months and incorporated work, encounter groups, and individual therapy. The therapeutic regimen focused on the acceptance of therapy, taking responsibility for oneself, self-awareness, respect for authority, and self-esteem. During this phase, residents could earn positions of responsibility through their participation in the program activities. The third phase consisted of reentry and lasted for up to 3 months. Program and parole staff worked with the residents to help prepare them to return to the community, and residents practiced planning and decision-making skills. Graduates of the prison TC could volunteer to enter Vista Aftercare, a community-based TC operated by Amity. Residents could remain in the aftercare program for up to 1 year.

Study Sample

Data for the study were collected as part of the evaluation of the Amity TC at Donovan prison in California (2). The study employed an experimental design with a randomized assignment of 715 clients into a no-treatment control and intent-to-treat group. Volunteers had to meet the criteria of having a drug problem, not having been convicted of arson or sexual crimes against minors, and having 9 to 14 months left of their sentence before becoming eligible for parole.

Data on motivation were collected on all inmates at admission to the study and prior to assignment to control and intent-to-treat groups. To reduce the demands of data collection on the clinical staff, data on client participation were limited to a single 12-month period within the Donovan study. The current study focuses on the first 3-month rating of participation. Three months is considered a critical period in TC treatment. It represents the initial orientation to the program, and it encompasses the end of the entry phase of treatment and the beginning of the primary treatment phase (13). In community-based programs, the first 3 months of treatment constitute the period of greatest risk for dropout (23–27).

Treatment progress ratings were collected for a total of 154 inmates. To make the staff and client findings comparable, only the 110 clients (71%) for whom there were 12-month follow-up data and for whom 3-month client and staff ratings were available were included in the analyses. Table 1 shows that the selected clients were similar to the nonselected clients in age, primary drug, ethnicity, and years incarcerated. They differed on aggregate drug severity (for

Table 1. Amity Prison Therapeutic Community (PC) Demographics—Treatment Group (N = 425)

	People with 3-Month Progress Scores (N = 154)		People Without 3-Month Progress Scores (N = 154)		Significance[a]
	n	%	n	%	
Age (years)					n.s.
18 to 25 years	51	33.1	67	24.7	
26 to 35	72	46.8	130	48.0	
36+	31	20.1	74	27.3	
Primary drug					n.s.
Alcohol	16	10.4	33	12.2	
Marijuana/hallucinogens	21	13.6	31	11.4	
Crack/cocaine	35	22.7	55	20.3	
Opiates	35	22.7	75	27.7	
Methamphetamines	43	27.9	67	24.7	
Poly/other drugs	4	2.6	10	3.7	
Ethnicity					n.s.
Black	49	31.8	93	34.3	
White	62	40.3	104	38.4	
Hispanic	39	25.3	66	24.4	
Other	4	2.6	8	3.0	
Years incarcerated					n.s.
1 or less	21	13.6	45	16.6	
2–4	62	40.3	100	36.9	
5–9	39	25.3	68	25.1	
10 or more	4	2.6	29	10.7	
Drug severity	$\bar{X} = 34.58$	SD = 11.7	$\bar{X} = 38.75$	SD = 11.54	$p < .01$
	Min = 10	Max = 60	Min = 7	Max = 60	

n.s. = not significant.

[a] Two-tail t test.

all drugs combined), although both the selected and nonselected clients scored over 30 on this variable, which is considered a high score.

Measurement of Motivation for Treatment

The CMR was used to measure client baseline motivation at intake. The instrument consists of an 18-item factored version of the 42-item CMRS (17, 28, 29). The CMR is derived from confirmatory factor analysis of data collected on drug abusers in long-term residential TC, drug-free outpatient, outpatient methadone treatment, and TC programs modified to treat adolescents (30). The instrument consists of four scales: Circumstances 1 (external pressure to enter treatment), Circumstances 2 (external pressure to leave treatment), Motivation (internal pressure to change), and Readiness (the perceived need for treatment as opposed to other change options). The CMR is self-administered, and items are rated on a 5-point Likert-type scale ranging from ''strongly disagree'' to ''strongly agree.'' Reliability measured by Cronbach's coefficient of internal consistency was .84 across different samples ($N = 4110$) of referral agencies, detoxification, methadone outpatient treatment, drug-free outpatient treatment, and short- and long-term residential treatment (30). Like the CMRS, the CMR shows consistent linear relationships between initial motivation at program admission and retention in treatment (5, 30).

A confirmatory factor analysis based on a prison sample ($N = 685$) demonstrated the construct validity of the CMR for prison TC inmates (18). Total score reliability was .84 as measured by Cronbach's coefficient of internal consistency. Individual scale score reliabilities ranged from .53 for the relatively discrete external pressures to enter treatment (Circumstances 1) to .84 for readiness for treatment (Readiness). Also, the CMR total score revealed statistically significant differences in baseline motivation among inmates who later dropped out of prison-based treatment, completed prison-based treatment, or completed prison-based treatment *and* entered aftercare.

Measurement of Client Participation

Two versions of a rating scale, the Center for Therapeutic Community Research Client Rating Progress Scales (CRPS) and Staff Rating Progress Scales (SRPS), were used to measure 3-month participation in treatment. Items are identical on the two instruments, with the exception of changes in wording relating items to the self on the client form or to others on the staff form. Each instrument consists of 25 Likert-type items. Responses range from 1 (poor) to 4 (excellent)

The scales are based on descriptions of the TC treatment process (13, 14, 16) and measure five domains of client participation in TC treatment programs. The domains consist of

> *Participation as a Role Model (RM Scale)* involves exemplifying the be-haviors and attitudes valued and expected by the community (e.g., ''My level of honesty/accountability is . . . ,'' ''My handling of re-sponsibility is . . . ,'').
>
> *Attitude, Motivation, and Participation (AM Scale)* is defined in terms of actively participating in community activities, such as meetings and classes (e.g., ''My attitude, motivation, and participation during morning meeting is . . . '').
>
> *Job Performance (JP Scale)* reflects the individual's responsibility toward the community and commitment to the values of the community (e.g., ''My attendance on my assigned jobs has been . . . '').
>
> *Participation in Therapeutic Groups (TG)* measures inner values of self-awareness and personal honesty and social values such as compassion and responsible concern for others (e.g., ''The extent to which my comments show concern rather hostility is . . . '').

Cronbach's alpha coefficient of internal consistency for the client version (CRPS) was .93 for the total score. Coefficients for the individual scales ranged from .69 for Participation as a Role Model to .92 for Job Performance. The construct valid-ity of the CRPS was supported by confirmatory factor analyses. The ability to conduct a confirmatory factor analysis for the entire instrument was limited by the sample size. Therefore, separate confirmatory factor analyses were conducted for each of the five scales using the EQS structural equations program (31, 32). Although chi square was significant for each of the scales, measures of goodness of fit consisting of the Normed Fit Index (NFI), Non Normed Fit Index (NNFI), and Comparative Fit Index (CFI) were acceptable. The value for these indices ranges from 0 to 1.0. A value close to 1.0 indicates a good fit for the model. The indices for the CRPS scales ranged from 0.92 to 1.0.

Cronbach's alpha for the staff instrument (SRPS) total score was .97 and ranged from .88 to .95 for the individual scales. The construct validity of the scales was supported by confirmatory factor analyses. Separate confirmatory fac-tor analyses were conducted for each of the five scales using the same procedures followed for the CRPS. Chi square was significant for all scales except Participa-tion as a Role Model. However, the goodness-of-fit indices for the scales were acceptable to high with the NFI, CFI, and NNFI ranging from 0.90 to 1.0. Only the NNFI estimate for the Attitude, Motivation and Participation scale fell below 0.90, with an index of 0.88.

Client Variables

In addition to motivation and treatment participation, criminal history and drug severity were included in the analyses. Criminal history is associated with recidivism in the criminal justice literature (33) and is included in the recidivism model as a control variable. Drug severity has been associated with relapse (34, 35) and is a control variable in the relapse model. Both of these variables are based on responses to the Donovan study baseline questionnaire. Drug severity was defined in terms of the frequency of drug use rated on a 10-point scale ranging from ''never used'' to ''used more than once every day.'' Separate items queried the use of cocaine, crack cocaine, opiates, amphetamines, and marijuana. Use of the rating for individual drugs yielded a skewed distribution with a highly restricted range from 8 to 10. Therefore, severity for cocaine, crack cocaine, opiates, amphetamines, and marijuana was aggregated to determine the drug severity variable used in the analysis. This aggregated score yielded a normal distribution with $\bar{X} = 34.21$, SD = 10.73, minimum score = 10, and maximum score = 60. Criminal history was based on a single item that recorded self-reported lifetime arrests.

The motivation-participation in treatment interaction variable was calculated by multiplying the motivation and total treatment participation scores. A preliminary analysis showed that the motivation-participation interaction predicted clients' entry into aftercare treatment when the other main independent variables (drug severity, criminal history, total CMR motivation score, and client 3-month participation ratings) are controlled in a logistic regression.

Entry into Aftercare

All inmates completing the prison-based TC treatment who volunteered for aftercare were placed in the program. Entry into aftercare represents the greatest source of variance in treatment status. For example, in the total Donovan sample, the prison TC dropout rate of 23% was relatively small compared to the 65% of prison TC completers who failed to enter aftercare (2).

Outcome Variables

The outcome criteria for the study consisted of recidivism and relapse at 12 months postprison. Recidivism was defined by reincarceration (with the exception of technical violations) within 12 months postprison and was based on arrest records. Relapse was defined as any drug use within 12 months postprison and

was based on a single question covering self-reported drug use at a 1-year post-prison follow-up interview.

RESULTS

Table 2 shows the 3-month participation mean scores for staff and clients. Staff ratings were consistently lower than client ratings on each of the scales. Also, staff presented a more unified view of client participation across the scales. Client scale score intercorrelations (excluding the composite total score) range from .28 to .67. Staff scale score intercorrelations range from .57 to .80. Thus, whereas client correlations range from moderate to high (36), staff intercorrelations are all in the high range.

Table 3 shows the means, standard deviations, and intercorrelations among the variables in the model. The bivariate correlations follow the pattern suggested by the proposed model. Significant correlations are found between both drug severity and criminal history and the motivation-participation interaction, between the motivation-participation interaction and entering aftercare, and between entering aftercare and both relapse and recidivism. Relapse and recidivism are themselves correlated.

The model was tested more directly using path analysis (37). Figure 1 shows the path diagram for a relapse model based on client self-ratings. Significant paths exist between drug severity and the motivation-participation interaction, between the motivation-participation interaction and entry into aftercare, and between aftercare entry and lower rates of relapse, as indicated by the negative sign. However, the direct path between baseline drug severity and relapse is not significant, indicating that there is no direct effect between drug history and relapse. The model was evaluated by fit assessments that included chi square, the Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), CFI, and the root mean square error of approximation (RMSEA). The fit indices range from 0 to 1.0, with values above 0.90 representing a reasonable fit. For chi square, good fit is indicated by values greater than $p < .05$, whereas for RMSEA, good fit is indicated by values less than .05. The current model is supported by a nonsignificant chi square ($\chi^2 = 0.875$, $df = 2$, $p = .65$) and by fit assessments with GFI $= 1.00$, AGFI $= 0.98$, CFI $= 0.96$, and RMSEA $= 0.00$. Figure 2 shows a similar model for recidivism. The path between criminal history and reincarceration is not significant, whereas significant paths exist between criminal history and the motivation-participation interaction, between the motivation-participation interaction and entry into aftercare, and between aftercare entry and lower 12-month reincarceration rates. The model is supported by a nonsignificant chi square ($\chi^2 = 0.06$, $df = 3$, $p = .97$) and by excellent goodness-of-fit indices, with GFI $= 1.0$, AGFI $= 1.0$, NFI $= 0.98$, and RMSEA $= 0.00$.

Table 2. Correlation and Mean Scores in 3-Month Progress Ratings by Staff and Clients ($N = 110$)

Participation Scales	RM Scale	AM Scale	JP Scale	TG Scale	Total Score
RM Scale		0.62[a]	0.37[a]	0.66[a]	0.80[a]
AM Scale	0.76[a]		0.28[a]	0.67[a]	0.82[a]
JP Scale	0.67[a]	0.57[a]		0.31[a]	0.55[a]
TG Scale	0.78[a]	0.80[a]	0.60[a]		0.89[a]
Total score	0.92[a]	0.89[a]	0.75[a]	00.93[a]	
Staff (mean, SD)[b]	12.32 (2.78)	11.47 (3.18)	10.56 (2.35)	16.63 (4.56)	60.26 (13.76)
Client (mean, SD)	14.55 (2.36)	13.41 (2.95)	13.32 (2.71)	19.19 (4.00)	70.86 (11.61)
t score	−9.23[c]	−6.73[c]	−11.02[c]	−6.32[c]	−8.70[c]

See text for definitions of abbreviations.

Correlation coefficients reported above the diagonal are for client progress scales and below the diagonal are for staff progress scales.

[a] $p < .01$ (two-tailed).

[b] All mean scores (between staff and client scales) were found to be statistically significant at $p < .01$.

[c] $p < .01$.

Table 3. Correlation and Mean for Study Variables ($N = 110$)

Variable	Recidivism	Relapse	Aftercare	Motivation * Participation	Criminal History	Drug Severity
Recidivism	1.00					
Relapse	0.397[a]	1.00				
Aftercare	−0.309[a]	−0.271[a]	1.00			
CMR	−0.035	−0.135	0.315[a]	1.00		
Participation						
Criminal history	0.148	0.071	0.088	0.184[b]	1.00	
Drug severity	0.129	−0.146	0.144	0.219[b]	0.164	1.00
Mean (SD)	0.60 (0.49)	0.75 (0.44)	0.36 (0.48)	48.34 (11.08)	2.40 (0.78)	34.21 (10.09)

Note: Motivation * Participation and drug severity item variability are reduced by dividing those variables by 10.
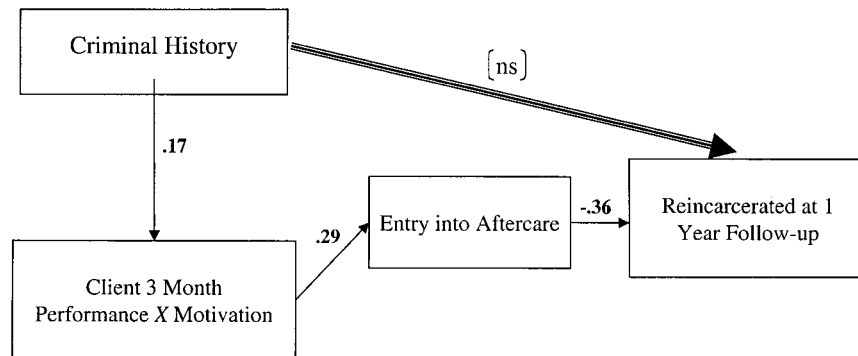
[a] $p < .01$ (two tailed).

[b] $p < .05$ (two tailed).
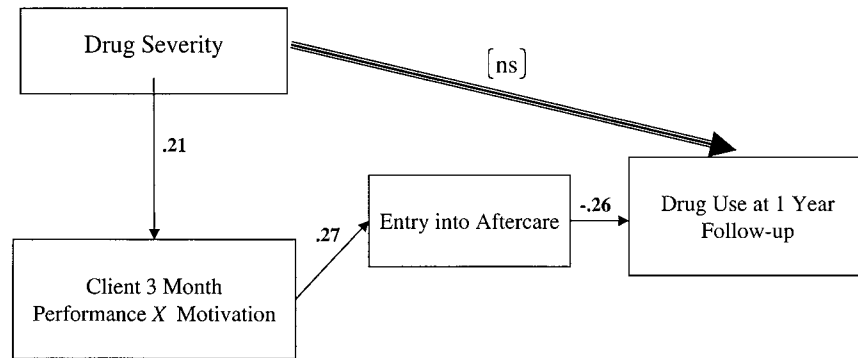
Figure 1. Path diagram: effect of drug severity and client self-rated 3-month performance ratings interacting with baseline motivation on treatment status and relapse (*N* = 110).

The path analyses for the staff participation ratings (not shown) use the same sample and variables as the client data. The relapse model for the staff ratings is identical to that in Fig. 1. The model shows no significant direct effect of drug severity on relapse. Significant paths exist from drug severity to the motivation-participation interaction and from the motivation-participation interaction to entry into aftercare. There is a negative effect of entry into aftercare on relapse. Chi square for the model is not significant (χ^2 = 6.078, *df* = 2, *p* = .08). Goodness-of-fit indices are at an acceptable level, with GFI = 0.98, AGFI = 0.92, CFI = 0.93, and RMSEA = 0.09.

Figure 2. Path diagram: effect of criminal history and client self-rated 3-month performance ratings interacting with baseline motivation on treatment status and recidivism (*N* = 110).

The model for recidivism is similar to Fig. 2. Criminal history showed no significant direct effect on reincarceration and no significant effect on the motivation-participation interaction. The motivation-participation interaction, however, continued to show a significant direct effect on entry into aftercare, and aftercare entry showed a direct effect on reincarceration. Chi square for the model is not significant ($\chi^2 = 4.057$, $df = 2$, $p = .225$). Goodness-of-fit indices are at an acceptable level, with GFI $= 0.984$, AGFI $= 0.945$, CFI $= 0.971$, and RMSEA $= .054$.

DISCUSSION

The findings support the TC theoretical formulation (13–16) that motivation and participation interact to determine continuance in treatment and that continuance in treatment determines treatment outcomes. The current findings are also compatible with those of Simpson and associates (38, 39), in which path analyses showed direct effects of motivation on treatment process (the therapeutic alliance), treatment process on treatment status (number of sessions attended), and treatment status on outcomes (relapse). The current findings augment this model by demonstrating an interaction between motivation and participation that sustains motivation through the course of treatment. This interaction effect represents a feedback loop in the model, emphasizing the continuing effect of motivation throughout treatment.

The combination of high motivation and high participation in treatment had a direct effect on voluntary entry into aftercare. These combined effects supplanted the separate roles of motivation and participation in the choice of aftercare. In the path analysis, the combined motivation-participation variable had a direct effect on the decision to enter aftercare, and aftercare had a direct effect on treatment outcomes. Criminal history and drug severity had a direct effect only on the motivation-participation interaction. This finding indicates that the previously cited relationship between criminal history or drug history and future recidivism and relapse are, at least in part, mediated by motivation. The generalization of the findings was enhanced by the applicability of the model to both relapse and recidivism and to client and staff ratings.

The current study also points to client and staff distinctions. As noted, the models for client and staff ratings were similar. However, these similarities may miss important client and staff differences. First, the higher degree of collinearity among staff ratings of the different domains of participation are in accord with TC theory, which holds that all of the activities in the TC are related to a single dimension of participation in the TC community (16). Second, comparison of client and staff ratings showed that clients consistently rated themselves higher on all of the participation scales. However, the lower staff ratings appear to be

a more accurate reflection of client participation. For example, staff ratings produced stronger direct effects between the motivation-participation interaction and selection of aftercare than did the client ratings (.37 versus .27 for the relapse model and .36 versus .29 for the recidivism model). The greater validity of the staff ratings is further demonstrated by additional bivariate analysis showing staff 3-month participation ratings of clients who remained abstinent were significantly higher than their ratings of clients who later relapsed by 12 months postprison ($\overline{X}$ = 66.44 to 59.38, df = 1, F = 4.85, p < .05). There was also a trend for greater validity of staff ratings in predicting recidivism in which staff ratings of clients who did not recidivate exceeded their ratings for those who were reincarcerated ($\overline{X}$ = 63.65 to 59.21, df = 1, F = 3.10, p < .10). For clients, 3-month participation ratings failed to predict either relapse or recidivism significantly. The clinical implications of these differences are not as yet understood. Greater discrepancies between client and staff may be an indicator of difficulties in the treatment process that result in dropout or other treatment failures.

The implications of the present findings for prison-based treatment programs arise from the study findings concerning the role of early treatment participation in the selection of aftercare. It is particularly impressive that the interaction of motivation and participation early in the treatment process predict entry into aftercare several months later despite the possible influence of myriad environmental factors, such as family support, previous employment history, and social influences. These findings indicate that the treatment process itself is critical to the continuance in aftercare, and that process involves both high motivation and high levels of participation in the treatment program. Overt compliance with a program based solely on external pressures without high internal motivation for change is not associated with better outcomes once the client is no longer subject to those external pressures (see Ref. 5). Thus, the enhancement of internal motivation is a necessary component of prison-based treatment programs. Motivation, however, is only part of the equation. In addition to motivational enhancement, interventions must also be developed to increase inmate participation in the treatment. These *participation enhancement interventions* may involve increasing the proportion of TC activities in the daily routine relative to those associated with the general prison and increasing the ability of programs to offer special groups, such as marathon groups which may not fit the prison routine. In addition, programs could stage special events early in treatment that would increase the interaction of the new admissions with the treatment community.

The use of a residential aftercare setting with high treatment demands leaves open the question of how well the present findings generalize to less-demanding aftercare settings, such as drug-free outpatient treatments. The motivational requirements are lower for less-demanding treatment settings. For example, admissions to programs designed to lower the barriers to treatment for special populations and outpatient programs show lower levels of motivation than admis-

sions to ''standard'' community-based residential TCs (5, 30). It remains to be determined whether the motivation-participation interaction is also less influential in determining entry into lower demand aftercare programs. Also, the expected direct effect of criminal history on recidivism suggested by previous studies (e.g., Ref. 34) was not found. The present study used lifetime criminal history rather than a more recent time span (e.g., the year prior to the arrest for the current offense), and this may have produced a different finding. Thus, additional research is needed to confirm the present finding that static client variables, such as criminal history or drug severity, exert only an indirect influence on posttreatment behavior through their influence on motivation and participation in treatment.

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