High- and Low-Structure Treatments for Substance Dependence: Role of Learned Helplessness

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ABSTRACT

We studied whether pretreatment levels of learned helplessness (LH) were related to outcomes for substance-dependent individuals receiving high-structure, behaviorally oriented (HSB) or low-structure, facilitative (LSF) treatment. The subjects were 120 substance-dependent patients randomly assigned to the HSB or the LSF treatment style for up to 12 weeks of weekly individual counseling. The two groups were compared across pretreatment characteristics as well as in-treatment, end-of-

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treatment, and 9-month postadmission follow-up outcome measures. Outcomes reflected reduction in problem severity, abstinence, retention, dropout rate, and ratings of treatment benefit. Significant and comparable reductions in symptoms occurred for the HSB and LSF patients both during treatment and at follow-up. Comparisons of other outcomes also did not consistently favor either treatment style. However, significant and consistent interactions were observed between LH and treatment styles with respect to several outcome measures, and these effects were independent of pretreatment levels of depression, addiction severity, and readiness for treatment. Specifically, the more ''helpless'' patients did significantly better in HSB treatment, whereas the less ''helpless'' patients had better outcomes in LSF treatment. A matching approach that assigns patients to high- and low-structure treatments based on pretreatment levels of LH might improve treatment outcomes for substance-dependent patients.

Key Words: Learned helplessness; Substance dependence; Treatment; Outcome; Drugs.

INTRODUCTION

The term *learned helplessness* (LH) was used initially to explain the cognitive, motivational, and behavioral deficits observed across a wide variety of organisms (1,2), including humans (3), that followed exposure to uncontrollable aversive situations. Under these circumstances individuals learn that situational outcomes are independent of voluntary responses and manifest a behavioral state characterized by withdrawal and failure to avoid negative events (4,5). Research with human subjects has led several investigators to propose an attributional framework to address some of the earlier theoretical controversies of the LH construct (6,7). Humans are believed to instinctively generate explanations for their helplessness, and these explanations or attributions are thought to determine the generalization and chronicity of LH behaviors.

Much of the work on learned helplessness has focused on its relationship to depression and stress (8–10). However, evidence suggests that LH may also be important in understanding the development and maintenance of drug-seeking behaviors. Feelings of low personal control and loss of self-esteem, for example, have been described as contributing to both the onset of adolescent drug use and the maintenance of chronic substance abuse (11,12). Also, in Marlatt and Gordon's (13) model of relapse prevention, the role of cognition and attribution is viewed as critical in determining behavioral and emotional responses to renewed substance use after a period of abstinence. Similarly, the sequelae of chronic

substance abuse (i.e., damaged families, unemployment, homelessness) are believed to exacerbate a personal sense of helplessness, further diminishing the likelihood that the individual will exert the control necessary to make significant, positive life changes (14).

Studies of the clinical relevance of LH in substance-dependent populations were previously limited by lack of a valid and reliable objective tool to assess LH. However, the development of a relatively brief (20 item), reliable, and valid Learned Helplessness Scale (LHS) (15) permitted the opportunity to examine the clinical correlates of LH in substance-dependent samples. In a study of cocaine-addicted patients, we found that items on the LHS had high internal consistency and were correlated with a wide variety of theoretically relevant measures supporting its construct validity; moreover, higher LH scores were associated with poorer retention in treatment (16). In a more recent study with a mixed substance dependent sample (17), we found that LH scores were unrelated to outcomes in the total sample. However, we observed that patients scoring higher on LH had better outcomes in high-structure, behaviorally oriented treatment, whereas lower LH scorers fared better in low-structure, facilitative treatment. Although the latter results indicate that LH may hold promise as a clinical indicator of response to specific treatments, the sample size for this study was relatively small and outcome measures did not include follow-up assessments. The present study attempted to cross-validate this LH with treatment style interaction in a larger patient sample using more extensive outcome measures.

The main purpose of this study was to examine the relationship between pretreatment levels of LH and measures of outcome for substance-dependent patients randomly assigned to high-structure, behavioral or low-structure, facilitative individual outpatient treatment. Based on findings of an earlier study (17), we hypothesized that patients with higher scores on LH will have better outcomes with high-structure treatment, whereas those with lower LH scores will fare better in a low-structure approach. A second purpose was to determine whether such LH $\times$ treatment style interactions, if confirmed, are independent of other important pretreatment predictors of outcome, including depression, drug addiction severity, and readiness for substance abuse treatment.

METHODS

Subjects

One hundred and twenty volunteers were recruited from individuals applying to participate in a 12-week outpatient substance abuse treatment

program in Philadelphia. The protocol was approved by the Institutional Review Board and, after the study was described to each subject, written informed consent was obtained. Subjects met DSM-IV (18) criteria for substance dependence. Individuals with a diagnosis of schizophrenia, major depression, bipolar disorder, schizoaffective disorder, or having serious cognitive impairment were excluded from the study. Because referrals from the criminal justice system or residential facilities that mandated abstinence would have introduced a biased sample, these subjects were also excluded from the study.

Assessments

All subjects were assessed using the LHS (15), the Beck Depression Inventory (BDI) (19), the Addiction Severity Index (ASI) (20), and a Treatment Readiness Questionnaire (TRQ). The complete ASI was administered at intake and an abbreviated version was given monthly during treatment and at 9-month postadmission follow up.

LHS

The LHS is a 20-item, self-report inventory that assesses an individual's sense of helplessness and lack of control over his or her behavior in meeting everyday problems. It requires 5 to 10 minutes to complete. Each item is scored from 1 (strongly disagree) to 4 (strongly agree), so that the possible range of scores is from 20 to 80, with higher scores reflecting a greater sense of helplessness; an example is ''I cannot find solutions to difficult problems.'' Scores in the present sample averaged 45.6 ± 11.1.

BDI

The BDI is a widely used, self-report questionnaire that assesses depressive symptomatology during the previous week and requires about 10 minutes to complete. It contains 21 items, each scored from 0 to 3, with higher scores representing increasing severity of depressive symptoms; total scores can range from 0 to 63, and scores in this research sample averaged 17.5 ± 10.3.

ASI

The ASI is a 40- to-50-minute structured interview that has been extensively used for clinical and research purposes. It assesses problem

severity in seven domains of functioning, including drug and alcohol use, employment/support, medical and legal status, family/social relationships, and psychiatric status. For each domain a composite score ranging from 0 (minimum) to 1 (maximum) is provided to assess self-reported problem severity in these areas during the previous 30 days.

TRQ

We adapted items from the RAATE-R, a structured interview designed to assess readiness for substance abuse treatment (21), for a self-report format. The 18-item questionnaire measures several aspects of readiness, including the patient's perception of the severity of his substance abuse problem, the type and degree of outside support, and abstinence orientation. Scores on the TRQ ranged from 1 to 54 in the research sample and averaged 29.7 ± 10.8.

Treatment Approach

After completing the intake process, eligible subjects participated in weekly outpatient individual counseling for a maximum of 12 weeks, each session lasting 60 minutes. Subjects were randomly assigned to either high-structure, behaviorally oriented (HSB) or low-structure, facilitative (LSF) individual counseling. Briefly, the HSB approach is based on more structured models of treatment, such as behavioral and reality therapies. It emphasizes the identification of problems and the development of short-term goals. The focus in this style is on thinking and behavior, with the counselor assuming an active role in directing and advising the client while keeping the interactions primarily in the present and immediate future. The LSF style, by contrast, draws from less-structured approaches, including client-centered and supportive-expressive therapies. It focuses on feelings and conflicts and uses a variety of techniques, such as eliciting and reflecting feelings and asking open-ended, nonleading questions. Counselors in both styles maintain a focus on substance abuse and related issues and adopt a consistently supportive stance. Manuals describing the counseling approach are available from the authors (22).

Adherence and Counterbalanced Design

Treatment was provided by 10 second-year graduate student counselors who were trained to criteria in the HSB and LSF styles. We were able to demonstrate through independent ratings of 5-minute audiotape segments randomly selected from recordings of the treatment sessions that these

Table 1. Comparison of mean adherence scale ratings for the HSB and LSF patients.

	HSB patients (N=60)	LSF patients (N=60)	*t*	p[a]
Adherence scales				
1. Focused on feelings/conflicts (LSF) versus thinking/ behavior (HSB)	5.02±1.42	3.35±1.74	5.75	<.001
2. Was less active (allowed silences) (LSF) versus more active (broke silences) (HSB)	5.95±1.54	5.66±1.53	1.01	ns
3. Asked open-ended questions (LSF) versus sought specific information (HSB)	4.47±1.53	4.56±1.87	2.89	<.01
4. Followed my lead (LSF) versus led and directed me (HSB)	4.32±1.66	3.17±1.93	3.49	<.01
5. Enouraged self expression (LSF) versus taught/coached/ advised me (HSB)	4.13±1.63	2.79±1.50	4.67	<.001
6. Wanted me to understand (LSF) versus wanted me to reach my goals (HSB)	5.75±1.67	4.71±2.04	3./7	<.01
7. Led me to my own explanations (LSF) versus explained things to me (HSB)	4.60±1.86	3.14±1.7/	4.48	<.001
8. Focused on the present and past (LSF) versus on the present and future (HSB)	5.93±1.43	4.50±1.67	5.02	<.001
Mean All 8 Scales	5.15±0.87	3.98±1.06	6.53	<.001

[a]2-tailed tests.

counselors could learn and deliver the HSB and LSF styles consistently. In addition, comparison of the mean postsession ratings for the HSB and LSF patients on each of eight LSF/HSB adherence scale dimensions (with lower scores reflecting LSF and higher scores HSB strategies) were consistently higher for the HSB patients and were significant for 7 of the 8 scales and for the overall mean score (Table 1).

Finally, each counselor conducted both treatments in serial but counterbalanced order with independent samples of patients to control for possible differences in counselor effectiveness.

Outcome Measures

The following treatment response measures were selected to represent both subjective and objective estimates of outcome. Means and standard deviations for these measures are summarized for the HSB and LSF samples in the Results section.

Counselor Rating of Treatment Benefit

The counselor completed a 12-item rating scale after the patient's last treatment session. Each item was scored from 1 (least benefit) to 8 (most benefit). The mean for the 12 items provided the counselor's estimate of the patient's treatment benefit. An internal consistency reliability 0.93 was found for this scale.

Patient Rating of Benefit

At the completion of each counseling session, the patient completed a parallel form of this treatment benefit rating scale. The mean for the 12 items for the rating that followed each session was used as the patient's rating of treatment benefit for that session. Because we had observed a high correlation between patient's initial and last in-treatment ratings of benefit, we employed the last minus the initial rating as a measure of outcome; thus, a positive difference reflected an increase in the patient's rating of benefit during the treatment period. An internal consistency estimate of .95 was found for the patient rating scale.

Number of Counseling Sessions Attended

The total number of individual sessions attended by each patient (1–12) offered an estimate of treatment retention and also reflected participation in the treatment process.

Dropout

Dropout from treatment was defined as attending no more than two scheduled counseling sessions during the 12-week treatment period.

Number of Negative Urines

Urine drug screens (UDS) were obtained for all subjects after each counseling session. The UDS was a one-step immunoassay for the detection of 10 substances: cocaine, opiates, alcohol, benzodiazepines, cannabinoids, barbiturates, amphetamines, methadone, phencyclidine, and propoxyphene. Urine was considered clean if it was negative for all substances. The number of UDS negatives (range 0–12) was used as a measure of substance use during treatment.

Problem Severity During and After Treatment

Because no pretreatment differences in ASI composite scores were found for the LSF and HSB samples (see Results section), we employed the last composite score obtained during the 12-week treatment period as a measure of problem severity, with lower scores reflecting less severe problems. Similarly, we employed the composite scores obtained at follow-up as measures of self-reported functioning in the 30 days preceding the follow-up assessment.

Statistical Analyses

Comparisons of the HSB and LSF samples with regard to demographic and pretreatment characteristics and with respect to outcomes during and after treatment were made employing two-tailed t-tests for independent samples for the continuous measures and chi-square tests for categorical variables. To assess whether significant reductions in problem severity occurred in the total sample during treatment and at follow-up, t-tests for correlated samples (two-tailed) were employed. To evaluate our main hypothesis, the sample was dichotomized (higher LH/lower LH) at the median LH score of 45. Two-factor analyses-of-variance (ANOVA) was then employed to examine outcomes as a function of interactions between LH and treatment styles (HSB vs. LSF). Based on our previous findings, we expected that high LH patients would fare better in HSB treatment, whereas low LH subjects would have better outcomes in LSF treatment; thus, one-tailed tests were appropriate for these analyses. Finally, post-hoc analyses were employed to investigate the possibility that any observed

LH×treatment style interactions might be influenced or mediated by pretreatment differences in depression (BDI scores), drug addiction severity (ASI composite scores), or readiness for treatment (TRQ scores). All analyses were conducted using SPSS 9.0 software.

RESULTS

Sample

The mean age for the 120 substance-dependent patients was 35 years. Sixty-two percent were men, 69% were African-American, and 30% were Caucasian. They averaged 12 years of education, were predominantly single (66%), and were typically unemployed (70%). The most frequently used substance was cocaine (49%), followed by alcohol (22%), opiates/analgesics (11%), alcohol and drug (9%), polydrug (4%), cannabis (4%), and hallucinogens (1%). Fifty-one of these patients (42%) were positive for at least one substance on their first UDS. Comparisons of the HSB and LSF groups revealed no significant differences for any of the demographic variables, for the proportion of initial UDSs that were positive, for the reported primary problem substance, or for pretreatment scores on the LHS, BDI, ASI, or TRQ.

Symptom Reduction During Treatment and at Follow-Up

We first examined whether changes in symptoms occurred in the total sample during treatment and at follow-up by comparing the mean pretreatment and end-of-treatment ASI composite scores, and the mean pretreatment and follow-up ASI scores. Statistically significant reductions in ASI composite scores were observed in six of the seven areas of functioning during treatment (all except employment/support), and these reductions were maintained for five of these areas at 9-month follow-up (Table 2).

Comparison of Outcomes for the HSB and LSF Samples

To determine whether outcomes differed for patients receiving the HSB or LSF treatments, we compared them on both the during-treatment and follow-up outcome measures. As can be seen in Table 3, there were no significant HSB vs. LSF differences in outcomes during treatment or at 9-month postadmission follow-up.

Table 2. Symptom reduction during treatment and at follow up: comparison of mean ASI composite scores.

During tx (N=96)	Pre-tx (mean±SD)	End-of-tx (mean±SD)	*t*
Alcohol Use	.228±.26	.088±.19	5.62[a]
Drug Use	.145±.12	.055±.09	7.13[a]
Employment	.754±.27	.727±.30	1.55
Family/Social	.217±.26	.141±.22	2.88[b]
Legal	.058±.17	.013±.09	3.16[b]
Medical	.254±.37	.153±.32	2.51[c]
Psychiatric	.322±.26	.195±.24	4.97[a]
Follow up (N=85)	Pre-tx (mean±SD)	Follow up (mean±SD)	*t*
Alcohol Use	.234±.27	.093±.18	5.04[a]
Drug Use	.149±.12	.057±.11	6.24[a]
Employment	.755±.28	.727±.29	1.27
Family/Social	.218±.25	.128±.21	3.08[b]
Legal	.052±.17	.020±.09	1.75
Medical	.286±.39	.164±.33	2.78[b]
Psychiatric	.332±.26	.209±.24	4.04[a]

[a]$p<.001$.
[b]$p<.01$.
[c]$p<.05$.
Two-tailed t tests.
df=84–95.

LH, Treatment Styles, and Outcome

Regarding the main purpose of this study, we assessed whether patients receiving the HSB or LSF treatments differed in outcome measures based on their pretreatment levels of LH. The 2×2 ANOVA results revealed no significant main effects for either treatment style (mirroring the results in Table 2) or for LH. Thus high and low LH patients did equally well when the LSF and HSB results were combined (i.e., in the total sample). Significant LH$\times$treatment style interactions, however, were found for several of the outcome measures, as summarized in Table 4. As hypothesized, the high LH patients had better outcomes in HSB treatment, whereas the low LH clients fared better in LSF counseling. The results are statistically significant for all of the in-treatment measures and strongest for the more objective criteria (i.e., dropout rate and negative urines). Although not

Table 3. Comparison of treatment outcomes for substance dependent patients treated in HSB and LSF individual counseling.

Outcomes	HSB (mean±SD)	LSF (mean±SD)	
In-treatment measures	(N=56)	(N=61)	*t*
Counselor's end-of-tx benefit rating	4.71±2.1	4.90±1.9	0.51
Patient's last minus first benefit rating	0.62±1.1	0.93±1.3	1.41
Number of sessions attended	5.15±3.5	5.10±3.4	0.09
Number of negative urines	3.08±3.4	3.34±3.7	0.40
Dropout: percentage Attending<=2 sessions	28.8	31.1	chi^2=0.078
End-of-tx ASI composite scores	(N=46)	(N=50)	*t*
Alcohol use	.099±.21	.077±.18	0.57
Drug use	.063±.10	.048±.09	0.79
Employment	.725±.29	.728±.31	0.05
Family/Social	.118±.20	.161±.23	0.96
Legal	.013±.09	.012±.08	0.06
Medical	.138±.30	.166±.34	0.43
Psychiatric	.204±.24	.187±.24	0.36
Follow-up ASI composite scores	(N=39)	(N=46)	*t*
Alcohol use	.065±.13	.117±.21	1.32
Drug use	.057±.10	.056±.11	0.02
Employment	.741±.28	.716±.29	0.40
Family/Social	.114±.18	.140±.22	0.57
Legal	.035±.13	.007±.03	1.31
Medical	.181±.34	.149±.32	0.45
Psychiatric	.224±.25	.196±.24	0.53

Note: None of the t-ratios were statistically significant (p>.05, 2-tailed tests, df=83–115).

Table 4. Mean outcome scores as a function of counseling style (CS) × learned helplessness (LH) interactions.

In-treatment measures (N=117–120)	HSB style		LSF style		$F^{CS \times LH}$	p^a
	Low LH	High LH	Low LH	High LH		
Counselor's end-of-tx benefit rating	4.36	5.07	5.26	4.53	3.845	.026
Patient's last minus first benefit rating	0.23	1.01	0.95	0.93	3.300	.036
Number of sessions attended	4.77	5.55	5.81	4.37	3.183	.038
% attending <=2 sessions	37.0	24.0	13.0	43.0	6.938	.005
Number of negative urines	2.60	3.59	4.32	2.33	5.524	.010
Follow-up outcomes[b] (N=85)	Low LH	High LH	Low LH	High LH	$F^{CS \times LH}$	p^b
ASI–Alcohol use	.089	.040	.109	.126	0.689	.204
ASI–Drug use	.073	.040	.036	.079	2.649	.054
ASI–Family/Social	.129	.098	.093	.190	2.059	.078
ASI–Psychiatric	.213	.236	.119	.281	1.752	.094

[a]1-tailed tests of significance, df during treatment (1,113) to (1,116), df at follow up=81.
[b]ASI composite scores: 1=highest problem severity; 0=lowest problem severity.

statistically significant, the results were generally in the expected direction for the follow-up outcomes and approached significance for three of the four measures.

Role of Pretreatment Differences in Depression, Drug Addiction Severity, and Readiness for Treatment

To examine the possible mediating role of key pretreatment variables, we computed Pearson correlations among LH, BDI, ASI drug use, and TRQ

scores in the total sample (N=120). Pretreatment depression and drug severity scores were positively associated with each other (r=.38, P<.001) and inversely associated with treatment readiness scores (r=$-$.31, P<.01 and r=$-$.27, P<.01, respectively). However, LH scores, though positively associated with the BDI (r=.35, P<.001), were not related to ASI drug use (r=$-$.04) or to TRQ (r=$-$.05) scores. Thus the LH$\times$treatment interactions noted previously are independent of pretreatment differences in drug addiction severity and in readiness for substance abuse treatment. To investigate the potential influence on these interactions of pretreatment differences in depression, which did correlate with LH, we repeated the LH$\times$treatment style analyses controlling for pretreatment BDI scores (ANCOVA). The F ratios for the LH$\times$treatment style interactions remained nonsignificant for the follow-up outcome analyses. However, though this F ratio decreased slightly in the analysis of the patient benefit ratings (from 3.30 to 3.19), but increased for the analyses of the counselor benefit ratings (3.84 to 4.01), sessions attended (3.18 to 3.22), dropout percentage (from 6.94 to 7.22), and number of negative urines (5.52 to 5.92). In brief, it seems clear that the LH$\times$treatment style interactions reported in Table 4 were as strong (if not stronger) when pretreatment levels of depression were controlled for statistically.

DISCUSSION

The main finding in this study was that substance-dependent patients differed in their response to high- and low-structure treatments based on their pretreatment levels of LH. More ''helpless'' patients had better outcomes when treated with a behaviorally oriented, high-structure approach, whereas the less ''helpless'' patients did better in a low-structure, facilitative approach. Significant interactions were found for all of the in-treatment measures and approached significance for three of four follow-up criteria. In this connection it seems worth noting that the stronger interactions were found for the objective outcome measures (dropout rate, negative urines) as compared with the self-report measures. Moreover, these results were found to be independent of pretreatment differences in depression, drug addiction severity, and readiness for treatment. The findings also cannot be attributed to differences in counselor effectiveness, because these were controlled by employing a counterbalanced design in which each counselor conducted both treatment styles. Given these methodological strengths and the consistency of findings, it seems that LH may be a clinically important behavioral variable that has the potential to optimize response to high- and low-structure treatments for substance-dependent populations.

Why more helpless substance dependent patients fare better in a high-structure, behavioral approach might be explained in part by attributional and cognitive theories. First, high LH individuals are believed to attribute their failure to exert control over external events primarily to stable, personal factors and exhibit these beliefs across a wide range of situations (6). This negative attributional style leads to expectations that outcomes are uncontrollable in any situation, such that it is deemed futile to initiate personal action to change aversive circumstances. Such patients are passively ''stuck'' in maladaptive patterns of behavior; therefore, they might benefit from a directive, task-oriented, high-structure approach. In a parallel, reformulated cognitive theory of LH that has been applied to human depression: the more helpless individual is considered to generate negative internal causal explanations for adverse external events that is thought to lead to a loss of self-esteem and self-efficacy (10). Again, such individuals might benefit from structured interventions that enable them to modify their cognitive style and regain control over the environment. By contrast, low LH patients infer that their behavioral deficits are due to specific factors that are short lived or occur across a narrow range of situations. They have less expectation of failure in most situations (23) and might be appropriate for a facilitative, low-structure approach that places a greater emphasis on the individual taking the lead in changing their behaviors.

Other findings in the study also deserve comment. Because patients in the high- and low-structure treatment groups showed comparable improvements across most outcome measures, it seems that both treatments have equivalent efficacy in the treatment of substance dependent patients. Although this is consistent with results from our previous study (17), contrasting findings have been reported in the treatment of alcoholism (24,25) and the question seems to merit further investigation. Though our findings suggest that a matching approach based on LH may be beneficial, the findings need to be replicated in different settings before definitive conclusions can be drawn. In this context, the lack of consistently strong evidence supporting the superiority of a particular type of psychotherapeutic approach for substance abusers, as seen in the results of two large treatment efficacy studies (26,27), indicates that researchers may need to revisit the issue of matching patients to treatments. Such matching approaches have been found to improved outcome in selected patient populations. For example, prospectively matching alcoholic patients to cognitive behavioral therapy or interactional therapy based on levels of sociopathy and psychiatric severity was found to reduce negative consequences of drinking (28). Similarly, targeting high- or low-directive treatments based on levels of resistance to treatment have been reported to be successful in overcoming resistance in psychotherapy (29).

Strengths of this study include the control of differences in patient characteristics through randomization and of potential differences in counselor effectiveness through the use of a counterbalanced design; the inclusion of multiple outcome variables, including both objective and subjective measures; the use of manualized treatments and demonstration of successful adherence to the counseling strategies employed; and the potentially greater generalizability of the findings by employing a mixed substance dependent sample, which may more realistically represent current substance use patterns. Our findings should also be interpreted in light of certain methodological limitations. The two styles of treatments were provided by relatively inexperienced graduate students, though they were supervised by experienced clinicians. Another limitation of the study is the lack of a ''no treatment'' control group, such that the observed symptom reduction cannot necessarily be attributed to our treatments. Also, it is possible that the use of a mixed substance dependent sample might obscure results that might apply to single-substance users. Our approach toward missing data (i.e., missed urine samples) was to use only the actual available data; the study could be criticized for not using statistical models to assign values to missing observations. However, our approach avoided making any assumptions about the missing data; moreover, studies using more or less conservative statistical approaches toward missing data have found no significant impact on outcome findings (30). Finally, the overall follow-up rate was somewhat lower than that reported in other treatment outcome studies, including earlier reports from our program. In recent years, we have observed that a significant proportion of patients referred to our program resided in temporary residential facilities such as shelters. After they left the facilities, they were difficult to locate, despite enlisting the help of family members and friends.

In conclusion, assigning patients to high- and low-structured treatments based on their pretreatment levels of learned helplessness may help to improve outcomes for substance dependent population entering individual outpatient treatment in a community-based setting. Although more controlled studies are clearly needed, the issue of LH seems to be a promising area for clinical research, particularly because the LH model provides a paradigm to examine the interface of the behavioral state with clinical as well as neurobiological variables.

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