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Behavioral Family Counseling for Substance Abuse: A Treatment Development Pilot Study

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Abstract

Substance-dependent patients (N=29) living with a family member other than a spouse were randomly assigned to equally intensive treatments consisting of either (a) Behavioral Family Counseling (BFC) plus Individual-Based Treatment (IBT) or (b) IBT alone. Outcome data were collected at baseline, post-treatment, and at 3- and 6-month follow-up. BFC patients remained in treatment significantly longer than IBT patients. BFC patients improved significantly from baseline at all time periods on all outcomes studied, and had a medium effect size reflecting better primary outcomes of increased abstinence and reduced substance use than IBT patients. For secondary outcomes of reduced negative consequences and improved relationship adjustment, both BFC and IBT patients improved significantly and to an equivalent extent. The present results show BFC is a promising method for retaining patients in treatment, increasing abstinence, and reducing substance use. These results also provide support for larger scale, randomized trials examining the efficacy of behavioral family counseling for patients living with family members beyond spouses.

Keywords

family counseling; treatment outcome

1. Introduction

Involving the family improves treatment outcomes in alcoholism and drug abuse (O'Farrell & Fals-Stewart, 2003; Stanton & Shadish, 1997). Behavioral Couples Therapy (BCT) is the

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family-involved treatment for alcoholism and drug abuse with the greatest evidence for its effectiveness (Epstein & McCrady, 1998). BCT produced better outcomes than more typical individual-based treatment (IBT) for married or cohabiting drug-abusing and alcoholic patients in a meta-analysis of 12 controlled studies that showed a medium effect size favoring BCT over IBT (Powers, Vedal & Emmelkamp, 2008). More specifically, patients who received BCT had less substance use, fewer substance-related problems, and better relationship functioning through 12-month follow-up than patients who received IBT. However, many patients live with a family member other than a spouse. Therefore, successfully adapting BCT for substance abusing patients living with an adult family member other than a spouse would nearly double the number of patients who could benefit from BCT.

We have been conducting a treatment development project to develop and pilot test a Behavioral Family Counseling (BFC) intervention for substance abusing patients who live with an adult family member other than a spouse. This project follows the stage model of behavioral therapies development research described by Onken, Blaine, and Battjes (1997). In this model, "Stage 1 ... involves identifying promising behavioral therapies ... and pilot testing the therapies" (Oncken et al, 1997, p. 482), and it involves two substages. Stage 1a involves developing a therapist manual for the new intervention and revising it based on experience treating an initial case series. Stage 1b involves a small scale randomized pilot study in which the new treatment is compared to an established treatment or to treatment as usual to see if the new therapy can produce clinically meaningful results. Because pilot study sample size is often too small to detect significant group differences, effect sizes also are examined to determine whether results are clinically meaningful. If Stage 1b results shows promise, then research moves on to Stage 2 which involves larger scale, more comprehensive randomized efficacy trials. Finally, Stage 3 involves effectiveness and dissemination studies of interventions shown to be efficacious in multiple Stage 2 trials.

An earlier report (O'Farrell, Alter, Murphy & Muchowski, 2006) described Stage 1a of this project in which we developed the BFC treatment manual, treated an initial case series of patients with BFC, and examined outcomes before and after BFC. Results showed significant improvements in days abstinent, substance-related problems, and family relationship adjustment. The clinical improvements observed in this initial case series were substantial as reflected in the large effect sizes obtained. These Stage 1a results suggested BFC has promise and provided support for moving on to Stage 1b in the treatment development process.

The present report describes Stage 1b of this project -- a small scale, randomized pilot study of BFC. Substance-dependent patients were randomly assigned to equally intensive treatments consisting of either (a) BFC plus IBT or (b) IBT alone. Outcome data were collected at baseline, post-treatment, and at 3- and 6-month follow-up. We tested the prediction that patients who received BFC in addition to IBT would improve, and do better than counterparts who received IBT alone, on primary outcomes of greater abstinent and less substance use and on secondary outcomes of fewer substance-related problems and better family relationship adjustment. Because the data were generated in a pilot study, these hypotheses should be viewed as exploratory. Analyses not only tested study predictions. They also examined whether clinically meaningful effect sizes were observed for the magnitude of BFC improvements and for the extent of differences between BFC and IBT outcomes, which would support the need for a larger randomized Stage 2 trial of BFC.

2. Method

2.1. Participants

Patients, who were living with a family member other than a spouse and who entered an outpatient clinic for treatment of substance abuse, were recruited to participate in a study of

the effects of family counseling. To be included, patients had to: (a) be between 18 and 65 years old; (b) have been living with an adult family member other than a spouse or cohabiting partner (i.e., with a parent, sibling, or adult child) for at least 6 of the past 12 months and have no immediate plans to stop living with the family member; (c) meet *Diagnostic and Statistical Manual for Mental Disorders* (4th ed., *DSM-IV*, American Psychiatric Association, 1994) criteria for current alcohol dependence or current drug dependence or both; (d) have family member be without current dependence or abuse of alcohol or any illicit drug; (e) have both patient and family member be without immediate suicide or homicide risk or lifetime schizophrenia, bipolar disorder with mania or psychosis, or another psychotic disorder; (f) refrain from other substance abuse counseling except self-help meetings for the duration of treatment; and (g) agree to goal of abstinence from alcohol and drugs for at least the duration of the study-based treatment.

Following the practice in prior BCT studies, patients were excluded if they had: (a) history in past 3 years of severe domestic violence between patient and family member on a day when drinking or drug use did not occur or if either patient or family member expressed fear that family counseling might create an undue risk of violence; (b) opioid agonist maintenance for opioid addiction (i.e., methadone or buprenorphine) in past 12 months or if they were planning such treatment in coming 6 months; (c) dependence on alcohol, heroin or other opioids, or benzodiazepines that required inpatient treatment or medical detoxification -- after completing detoxification, they were eligible for the study. Patients also were excluded if they had a history in past 5 years of drug overdose (intentional or not) or suicide attempt.

Study participants were drawn from 1200 consecutive individuals seeking treatment at the study site who completed a phone intake and scheduled an in-person intake interview during the 19 months from August 2006 to February 2008. Of these, 1039 patients (87%) were ineligible based on their phone intake, with 837 (70%) not living with a qualified family member, 79 (7%) not having a current substance problem (e.g., in full or partial remission seeking relapse prevention help), 46 (4%) out of age range, 8 (1%) unwilling to forgo other counseling, 14 (1%) had psychotic problem or suicide risk, 52 (4%) had a combination of reasons, and 3 had family member with a substance problem. Of the 161 patients who appeared eligible based on their phone intake, 82 (51%) failed to keep their in-person intake appointment, 47 (29%) refused to take part in the study, 3 (2%) signed an informed consent but never started treatment, and 29 (18%) enrolled in the study with a family member and began treatment. This left a final intent-to-treat sample of 29 patients with 15 assigned to BFC and 14 assigned to IBT.

Demographic and other background data for the 15 BFC patients and 14 IBT patients are presented in Table 1. The patients, on average, were in their late 20's, high school educated, mainly white, living with their parent(s), and about half were females. Participating family members were mainly mothers. Primary substance of abuse from a clinical algorithm (Fals-Stewart, 1996) was alcohol for 11 patients (38%), opiates for 8 (28%), cocaine for 5 (17%), cannabis for 4 (14%), and sedatives for 1 (3%). The number of patients who met DSM-IV substance-dependence criteria was 13 for alcohol (45%), 12 for opiates (41%), 11 for cocaine (38%), 6 for cannabis (21%), and 1 for sedatives (3%). Most (79%) used their primary substance plus 1 or more other substances. BFC and IBT groups were similar on variables in Table 1 with 2 exceptions. BFC patients had fewer years of education ($p=.054$), so education was used as a covariate in analyses comparing outcomes for BFC and IBT. BFC patients attended more of their scheduled counseling sessions (averaging 17 of 24 planned sessions) than did IBT patients who averaged only 12 sessions ($p=.046$),¹ but this was not controlled in later analyses because it was considered a substantive finding not a confounding variable.

One IBT patient who had attended treatment sessions sporadically died from an overdose of alcohol and pills about 2 months after entering the study. Outcome data were not available on this patient. Therefore, outcome results are presented here on 15 BFC and 13 IBT patients.

2.2. Procedures

Treatments—Patients were randomly assigned to one of two equally intensive, manual-guided treatments: (a) Behavioral Family Counseling (BFC) plus individual-based treatment (IBT) or (b) IBT for the patient alone. Urn randomization (Stout, Wirtz, Carbonari & Del Boca, 1994; Wei, 1978) was used to balance the 2 conditions on age (18-25 vs over 25), family member (parent vs other relative), and primary substance (alcohol vs other drug).²

The two treatment conditions each consisted of 24 sessions over a 12-week period, with 2 sessions scheduled each week. In the BFC+IBT condition, BFC and IBT sessions alternated with 12 sessions devoted to BFC and 12 sessions to IBT. In the IBT only condition, all 24 sessions were IBT sessions. Treatment sessions were scheduled to last 60 minutes in each condition.

For the *Behavioral Family Counseling (BFC) Plus IBT Condition*, both the patient and family member attended 12 BFC sessions designed to establish a “daily trust discussion” in which the family member verbally reinforced the patient's daily statement of intent to remain alcohol and drug free, increase positive activities, reduce conflict, and improve communication. The BFC manual (O'Farrell, Fals-Stewart & Alter, 2006) was adapted from a BCT manual (Fals-Stewart, O'Farrell, Birchler & Gorman, 2004) to make it applicable to family member dyads other than spouses. BFC retained the same major emphasis on daily support for abstinence as in BCT, but BFC placed less emphasis on relationship enhancement aspects. Specifically, BFC placed less emphasis on daily expressions of affection and shared rewarding activities that fit better with spouses than with other family relationships. BFC also had less communication skills practice at home, relying instead on more direct therapist coaching of better communication to resolve problems during BFC sessions. These adaptations were designed to fit contrasting developmental needs of non-spousal, mostly parent-adult-offspring dyads (e.g., sobriety to support increased autonomy and separation) versus partner relationships (e.g., sobriety to support increased involvement and closeness). The 12 IBT sessions with the patient alone were taken from the Project MATCH Cognitive Behavioral Therapy (CBT) manual (Kadden et al., 1992).

For the *Individual Based Treatment (IBT) Only Condition*, the patient attended all 24 sessions by themselves, and the family member did not participate in the therapy. The 24 IBT sessions were drawn from the Project MATCH CBT manual (Kadden et al., 1992). To increase the 12-session MATCH CBT manual to the 24-session manual used in this study, each of the sessions used in MATCH was repeated once (e.g., the MATCH session on “Cravings and Urges” was expanded to 2 consecutive sessions on this topic to facilitate more understanding, practice, and homework assignments on this topic).

In terms of *treatment delivery and ongoing supervision*, 3 Masters-level therapists provided study treatments -- a licensed social worker with over 10 years BCT experience who also served as clinical supervisor for the study, and 2 licensed clinicians with over 5 years substance abuse experience who were trained for the study. Weekly 90-minute group supervision sessions

¹BFC patients attended similar numbers of individual and family sessions. More specifically, BFC patients averaged 8.8 BFC sessions (69% of planned 12 BFC sessions) and 8.3 IBT sessions (73% of planned 12 IBT sessions). IBT patients averaged 12.0 IBT sessions which was 50% of their planned 24 IBT sessions.

²Urn randomization is a method to balance prognostic factors across groups in randomized clinical trials. Developed for use in clinical trials more broadly (Wei, 1978), it has been used frequently in clinical trials for alcoholism and drug abuse (e.g., Stout et al, 1994). The present study used an urn randomization computer program developed for Project MATCH (2005).

included review of audiotaped therapy sessions and discussion of cases to ensure BFC and IBT sessions were delivered as intended and to review progress of cases in treatment.

Data collection—Outcome and related measures were obtained from patients and family members at baseline, post-treatment, and at 3- and 6-month follow-up after treatment. For participants who dropped out of their assigned treatment prior to completion, the post-treatment assessment was scheduled for the date they would have completed treatment. Outcome data through 6-month follow-up were available for all of the 15 BFC and 13 IBT dyads. It was not possible to keep follow-up interviewers unaware of subject's treatment condition.

2.3. Measures

Substance use outcomes—The Timeline Follow-back (TLFB; Sobell & Sobell, 1966) calendar method gathered substance use information for the past 6 months at the pretreatment baseline and for the past 3 months at each subsequent interview. Two TLFB variables were analyzed: *percent days abstinent (PDA)* from drinking or using illicit drugs while not in jail or hospital; and *percent days using primary substance (PDPS)*. Both patient and family member completed the TLFB about the patient. PDA and PDPS scores used for each patient was the worst case score (indicating fewer PDA and more PDPS) of patient and family member reports at each time period; if only one person's score was available, that score was used.

Alcohol- and drug-related negative consequences—These were measured with the total score for the previous 90 days on the Inventory of Drug Use Consequences (INDUC; Tonigan & Miller, 2002), which assesses consequences of both drinking and other drug use. Both patient and family member completed the INDUC about the patient. The INDUC score used for each patient was the worst case score (indicating higher consequences) of patient and family member reports at each time period; if only one person's score was available, that score was used.

Relationship adjustment—This was measured with the Relationship Happiness Scale (RHS; Smith & Meyers, 2004) on which respondents rate relationship satisfaction in 10 areas using Likert scales. The RHS was adapted from the Marital Happiness Scale (Azrin, Naster, & Jones, 1973) for use with family dyads beyond spouses by changing instructions to rate happiness “with your relationship with your loved one” rather than “with your spouse or partner”. The RHS is sensitive to improvements from before to after treatment (e.g., Miller, Meyers, & Tonigan, 1999), but we are not aware of other psychometric information on the RHS. The RHS total score used for each dyad was the average of the patient and family member scores at each time period; if only one person's score was available, that score was used.

2.4. Analyses

BFC improvements and BFC vs IBT outcomes—First, BFC and IBT patients did not differ on baseline scores of outcome measures (all $ps > .60$). Second, to examine improvement for patients in BFC and in IBT, paired sample t -tests were used to compare baseline scores from before treatment with each outcome score (post, 3-, and 6-month follow-up) for each measure to determine whether patients in each condition showed significant improvement from baseline to that follow-up period. Third, to examine possible outcome differences, pairwise contrasts between BFC and IBT were conducted at each outcome point using an ANCOVA in which baseline score on the respective dependent variable and patient education served as covariates.

Results presented are for the intent to treat sample. We also examined results separately for the 11 patients in the BFC condition and 8 patients in the IBT condition who completed at least half of their assigned treatment sessions, and thus were considered to have been exposed to a

credible dose of the planned treatment. Results for the treatment-exposed subsample are presented only when they differ from intent to treat results.

Criteria for whether BFC produced clinically meaningful effects—The effect size r (Rosenthal, 1991), a correlation coefficient, was used to interpret the magnitude of BFC improvements and the extent of differences between BFC and IBT outcomes observed. A correlation value of $r = .10$ was considered a small effect, $r = .30$ a medium effect, and $r = .50$ a large effect (Cohen, 1988). An r of .20 or greater was considered a clinically meaningful effect (Elashoff, 1997). BFC was considered to have produced clinically meaningful effects worthy of further larger scale research (a) if BFC showed improvement from before to time points after BFC and (b) if BFC outcomes were better than, or at least not inferior to, IBT.

More specifically, 3 criteria for judging whether BFC produced clinically meaningful effects, which were based on other Stage 1b pilot studies (Lam, Fals-Stewart & Kelley, 2008; O'Farrell, Murphy, Alter, & Fals-Stewart, 2008), consisted of the following: (1) BFC would show improvement from before to time points after BFC with the extent of improvement reflected by an effect size of $r = .20$ or greater; (2) BFC outcomes would be better than IBT with strength of effect favoring BFC of $r = .20$ or greater; (3) BFC outcomes would not be inferior to IBT with strength of effect favoring IBT of $r = .20$ or greater.

3. Results

3.1. Primary Outcome - Substance Use

Percent days abstinent (PDA)—BFC patients were significantly improved on PDA from before to after treatment and at 3- and 6-month follow-up, with the extent of improvement reflected by a medium to large effect size. IBT patients were not significantly improved on PDA after treatment or at 3- or 6-month follow-up, with extent of improvement reflected by a small effect size for IBT. Table 2 displays these results.

BFC patients had non-significantly greater PDA than their IBT counterparts at post ($p = .085$) and at 3-month but no evidence of any difference at 6-month follow-up. The magnitude of this difference favoring BFC over IBT was a medium effect size at post and 3-month follow-up. Table 3 and Figure 1 display these results.

Results for the treatment exposed subsample showed similar improvements as with the intent to treat sample. However, effects favoring BFC over IBT were greater than for the intent to treat sample. BFC had significantly greater PDA than IBT at post with a large effect favoring BFC and a trend ($p = .064$, medium effect) at 3-month follow-up.

Percent days using primary substance (PDPS)—BFC patients were significantly improved on PDPS from before to after treatment and at 3- and 6-month follow-up, with the extent of improvement reflected by a medium to large effect size. IBT patients were non-significantly improved on PDPS after treatment ($p = .071$) and at 3- or 6-month ($p = .064$) follow-up, with extent of improvement reflected by a small to medium effect size for IBT. Table 2 has these results.

BFC patients had non-significantly lower PDPS than their IBT counterparts at post and at 3-month but no evidence of any difference at 6-month follow-up. The magnitude of this difference favoring BFC over IBT was a medium effect size at post and 3-month follow-up. Table 3 and Figure 2 display these results.

Results on PDPS for the treatment exposed subsample showed similar improvements as with the intent to treat sample. However, effects favoring BFC over IBT were greater than for the

intent to treat sample. BFC had non-significantly greater PDPS than IBT at post and at 3-month follow-up (both medium effects, $r = .36$) and also at 6-month follow-up ($r = .24$).

3.2. Secondary Outcome - Negative Consequences of Substance Use

BFC patients were significantly improved on INDUC negative consequences scores from before to after treatment and at 3- and 6-month follow-up, with extent of improvement reflected by a medium effect size. IBT patients showed nearly identical results. Table 2 has these results.

BFC patients had very similar INDUC scores to their IBT counterparts at post ($r = .07$) and at 6-month follow-up ($r = .01$). At 3-month follow-up a non-significant small effect favored IBT over BFC. Table 3 displays these results.

Results for the treatment exposed subsample showed similar significant medium effect size improvements for both BFC and IBT patients as with the intent to treat sample. However, BFC patients had lower (i.e., better) INDUC scores than their IBT counterparts at post ($r = .33$) and very similar scores at 3- ($r = .02$) and 6-month follow-up ($r = .05$).

3.3. Secondary Outcome - Relationship Adjustment

BFC patients were significantly improved on RHS scores from before to after treatment and at 3- and 6-month follow-up, with the extent of improvement reflected by a medium effect size. IBT patients showed nearly identical results. Table 2 displays these results.

BFC patients had very similar RHS scores to their IBT counterparts at post ($r = .07$), 3- ($r = .05$) and 6-month follow-up ($r = .07$). Table 3 displays these results.

4. Discussion

Results generally supported the clinical utility of BFC for non-spousal dyads with a substance-abusing member. BFC retained patients in treatment significantly longer than IBT, a finding consistent with lower patient dropout observed for family vs. individual treatment in a meta-analysis (Stanton & Shadish, 1997). BFC also had better outcomes than IBT on the primary outcome of substance use. First, BFC patients significantly increased days abstinent and significantly decreased days using patients' primary substance from before to after treatment and at 3- and 6-month follow-up, with the extent of improvement reflected by a medium to large effect size. However, IBT patients were not significantly improved on days abstinent and days primary substance use, with extent of improvement reflected by a small to medium effect size. Second, BFC patients had non-significantly better outcomes on these 2 substance use variables than their IBT counterparts. The magnitude of this difference favoring BFC over IBT was a medium effect size at post and 3-month follow-up and a small effect at 6-month follow-up.

Results for secondary outcomes of negative consequences and relationship adjustment were similar. On each measure at all time periods, both BFC and IBT showed significant improvement reflected by a medium effect size. The 2 treatments also had generally very similar outcomes with only a very small effect size difference at all time periods. The only exception to this general pattern was at 3-month follow-up for negative consequences where a nonsignificant effect (midway between small and medium) favored IBT over BFC.

This was a Stage 1b pilot study (Onken et al, 1997) that was considered an exploratory study of BFC. The goal was to see if BFC produced clinically meaningful effects that would support the need for a larger randomized trial of BFC. Using 3 specific criteria (listed at the end of the Analysis section above) for judging whether BFC produced clinically meaningful effects, we can evaluate the present study findings. For the first criterion, all 4 outcome variables in Table

2 meet this criterion. Improvement effect sizes for BFC at post, 3- and 6-month follow-up range from $r = .27$ to $.53$, with a mean r of $.38$ which is midway between a medium and a large effect size. For the second criterion as shown in Table 3, BFC had superior outcomes at post and 3-month follow-up for primary outcomes of increased abstinent days and reduced substance using days with effect size ranging from $r = .23$ to $.32$, with a mean r of $.29$ which is a medium effect size. However, by 6-month follow-up these effects favoring BFC had decreased to a small effect size. Secondary outcomes of negative consequences and relationship adjustment did not meet this second criteria because both BFC and IBT patients showed similar improvements with little difference between the 2 treatments. For the third criterion, all variables at all time periods meet it except negative consequences at 3-month follow-up where IBT had non-significantly better outcomes with effect size $r = .23$.

In conclusion, BFC patients improved significantly at all time periods on all outcomes studied, had better primary outcomes of increased abstinence and reduced substance use than IBT patients, and had equivalent secondary outcomes of reduced negative consequences and improved relationship adjustment to IBT patients. The present results show BFC is a promising method for retaining patients in treatment, increasing abstinence, and reducing substance use. These results also provide support for larger scale, randomized trials with improved methods (e.g., blinding of assessors, assessment of intervention fidelity, greater external validity) to examine the efficacy of BFC for patients living with family members beyond spouses. If future studies confirm these promising BFC results, then BFC and BCT should be a standard part of treatment programs especially for those younger and earlier in their substance-abusing careers who are most likely to be still living with a relative or stable partner.

Study limitations and unexpected findings should be noted. First, the modest sample size of this exploratory pilot study is the major limitation. Second, by 6-month follow-up, effects favoring BFC on primary substance use outcomes of PDA and PDPS had decreased below r of $.20$. This change occurred because 4 patients who dropped out of IBT deteriorated clinically and, as a result, entered intensive treatment during the 3-month period that led to increased abstinence for IBT at 6-month follow-up, thus highlighting the impact of non-study treatments for a few cases when sample size is limited. Third, negative consequences did not show outcomes favoring BFC over IBT; in fact just the opposite finding was observed at 3-month follow-up.

Fourth, results for the treatment exposed sample of patients who completed at least half of their planned treatment sessions showed stronger results favoring BFC for days abstinent, days substance use, and negative consequences than were found for the intent to treat sample. Interestingly, some of the puzzling findings just noted with the intent to treat sample are not observed for this subsample of patients. For days substance use, results continue to favor BFC over IBT at r greater than $.20$ at 6-month follow-up. For negative consequences, results favored BFC over IBT at post (medium effect), and IBT did not have better outcomes at any time period.

Fifth, it was surprising that relationship adjustment was not better for BFC than for IBT patients because studies typically find a medium effect favoring BCT over IBT on relationship outcomes (Powers et al, 2008). Perhaps dyads consisting mainly of a parent and young adult offspring respond differently to conjoint counseling for substance abuse than couples do. For example, when BFC increases sobriety this may support increased autonomy and separation in the non-spousal dyad which shows up as lower relationship functioning scores, whereas when BCT increases sobriety this may support increased involvement and closeness in the couple. Also, relationship enhancement received less emphasis in the adapted BFC manual than in the BCT manual. Further, available measures may not adequately capture relationship processes for parent-adult-offspring dyads. For example, the RHS measure we used was

adapted from a couple adjustment measure, and the RHS has only very limited psychometric data.

Finally, only a small percentage of clinic patients lived with family, raising questions about the need for BFC. However, the clinic studied here is not representative of the many treatment programs in which half or more of patients live with a partner or family member (O'Farrell & Fals-Stewart, 2006; Tracy, Kelly & Moos, 2005).

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Figure 1. Percent Days Abstinent (PDA) by treatment condition at each assessment. (Note. The PDA measurement interval at pretreatment was the past 6 months; the interval for each subsequent time period was the past 3 months.)

Figure 2.

Percent Days Using Primary Substance (PDPS) by treatment condition at each assessment.

(Note. The PDPS measurement interval at pretreatment was the past 6 months; the interval for each subsequent time period was the past 3 months.)

Table 1
Characteristics of Patients and Family Members by Treatment Condition

	Family (N=15)	Individual (N=14)	χ^2 or <i>t</i> value	
Patient Demographics				
Age: Mean (SD)	28.8 (9.7)	29.4 (11.7)	0.16	.876
Years Education: Mean (SD)	12.2 (1.3)	13.6 (2.3)	2.05	.054 ^a
Yearly Income: Mean (SD)	11,267 (12,205)	12,464 (19,116)	0.20	.841
Race-ethnicity (% White)	86.7	92.9	0.30	.584
% Employed	46.7	28.6	1.01	.316
Gender (N)			0.04	.837
Male	8	8		
Female	7	6		
Primary Substance of Abuse (N)			1.23	.868
Alcohol	6	5		
Opiates	4	4		
Marijuana	2	2		
Cocaine	3	2		
Sedatives	0	1		
Family Member Demographics				
Age: Mean (SD)	55.6 (8.0)	55.1 (6.5)	-0.18	.858
Years Education: Mean (SD)	13.7 (2.3)	14.6 (2.8)	0.88	.385
Race-ethnicity (% White)	93.3	85.7	0.45	.501
% Employed	86.7	92.9	0.30	.584
Gender (N)			1.98	.159
Male	2	5		
Female	13	9		
Treatment Participation				
Family Member Participating (N)			0.003	.960
Parent	14	13		
Sibling	1	1		
Sessions Attended: Mean (SD)	17.1 (6.7)	12.0 (6.3)	-2.09	.046 ^a
Number with 12 or more sessions	11	8	0.84	.359

^aThe Family and Individual conditions differed on this variable.

Improvement on Substance Use and Relationship Outcomes After Tx by Condition

Table 2

	Pre-Tx		Post-Tx		3-mo Fup		6-mo Fup	
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
% Days Abstinent								
Family Condition	32.5 (33.4)	71.1 (37.0) ^a	.49	60.3 (35.3) ^a	.43	57.7 (40.4) ^a	.31	
Individual Condition	35.2 (27.3)	43.6 (41.9)	.15	37.7 (34.6)	.10	46.4 (32.0)	.20	
% Days Primary Substance Use								
Family Condition	51.9 (29.5)	19.9 (27.5) ^a	.51	18.6 (20.0) ^a	.53	29.2 (41.4) ^a	.27	
Individual Condition	55.8 (27.7)	41.1 (37.3) ^a	.26	49.0 (37.6)	.16	38.7 (30.6) ^a	.27	
INDUC Negative Consequences								
Family Condition	57.7 (34.0)	28.9 (37.2) ^a	.31	38.1 (34.7) ^a	.28	31.7 (30.5) ^a	.36	
Individual Condition	53.9 (22.7)	30.1 (26.0) ^a	.41	26.0 (18.2) ^a	.41	30.4 (26.8) ^a	.37	
RHS-Dyad Score								
Family Condition	42.4 (19.5)	58.8 (13.9) ^a	.38	56.3 (12.9) ^a	.34	52.8 (17.6) ^a	.30	
Individual Condition	42.5 (11.9)	54.8 (11.7) ^a	.49	54.1 (15.0) ^a	.36	51.2 (15.2) ^a	.26	

^aThis score shows significant improvement ($p < .05$) from the Pre-Tx assessment.

(^a) This score shows a non-significant trend toward improvement ($p < .10$) from the Pre-Tx assessment.

ES r = effect size (from pre vs later time period paired sample t-tests) expressed as a correlation coefficient (Rosenthal, 1991), with $r = .10$ a small effect, $r = .30$ a medium effect, $r = .50$ a large effect (Cohen, 1988). An r of .20 or greater was considered clinically meaningful.

INDUC = Inventory of Drug Use Consequences

RHS = Relationship Happiness Scale

F-Statistic Values and Effect Size *r* for pairwise comparisons of Family and Individual treatment conditions at each follow-up assessment point (ANCOVA with baseline score and patient education as covariates)

Table 3

	Post-Tx		3-mo Fup		6-mo Fup	
	F-Statistic (p value)	ES <i>r</i>	F-Statistic (p value)	ES <i>r</i>	F-Statistic (p value)	ES <i>r</i>
% Days Abstinent						
Family vs. Individual	3.22 (.085)	.32	2.40 (.134)	.28	0.22 (.646)	.09
% Days Primary Substance Use						
Family vs. Individual	1.56 (.224)	.23	2.77 (.109)	.31	0.0002 (.969)	.01
INDUC Negative Consequences						
Family vs. Individual	.12 (.734)	.07	1.61 (.218)	.23	.003 (.956)	.01
RHS-Dyad Score						
Family vs. Individual	.13 (.723)	.07	0.07 (.801)	.05	0.13 (.920)	.07

ES *r* = effect size (from pairwise comparison F-tests) expressed as a correlation coefficient (Rosenthal, 1991), with *r* = .10 a small effect, *r* = .30 a medium effect, *r* = .50 a large effect (Cohen, 1988).
An *r* of .20 or greater was considered clinically meaningful.

INDUC = Inventory of Drug Use Consequences

RHS = Relationship Happiness Scale