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Brief Family Treatment Intervention to Promote Aftercare Among Male Substance Abusing Patients in Inpatient Detoxification: A Quasi-Experimental Pilot Study

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Abstract

We developed a brief family treatment (BFT) intervention for substance abusing patients in inpatient detoxification to promote aftercare treatment post-detox. BFT consisted of meeting with the patient and a family member (spouse or parent) with whom the patient lived to review and recommend potential aftercare plans for the patient. A phone conference was used when logistics prevented an in-person family meeting. Results indicated that male substance abusing patients who received BFT (*N*=14), as compared with a matched treatment as usual (TAU) comparison group (*N*=14) that did not, showed a trend toward being more likely to enter an aftercare program and to attend more days of aftercare in the 3 months after detoxification. The magnitude of these differences favoring BFT over TAU was midway between a medium and a large effect size. Days using alcohol or drugs in the 3 months after detox were lower for treatment-exposed BFT patients who had an in-person family meeting than TAU counterparts (trend, medium effect), and for patients who entered aftercare regardless of treatment condition (significant large effect).

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Meta-analytic reviews indicate that involving the family in the patient's treatment generally is an effective means to promote recovery from alcoholism and drug abuse (O'Farrell & Fals-Stewart, 2001;Stanton & Shadish, 1997), but most empirically supported family treatment methods are relatively lengthy and intensive (O'Farrell, 1993). Although still relatively untested, some of the most potentially widely applicable family treatment methods involve brief intervention with family members at key times in the patients' addiction treatment to promote continued use of treatment.

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Promoting continued treatment after inpatient or intensive outpatient programs is important for the severely dependent substance abusing patients treated in many settings. Such patients do better with longer duration treatment (Gottheil, McLellan & Druley, 1992;McLellan, Woody, Metzger, McKay, Alterman & O'Brien, 1996;Moos, Pettit & Gruber, 1995;O'Farrell, Choquette & Cutter, 1998). Ideally the continued care will be provided in lower cost outpatient or residential settings and will prevent readmission to more intensive levels of care for relapse. Brief family intervention during inpatient treatment may promote this goal of continued aftercare by substance abusing patients.

Family assessment interviews to aid treatment planning in inpatient substance abuse treatment programs have been shown to improve patient outcomes in correlational and program evaluation studies. Treatment programs that regularly involve family members in such assessment interviews had better than expected case-mix-adjusted 6-month readmission rates for patients in 101 U.S. Department of Veterans Affairs substance abuse treatment programs (Peterson, Swindle, Phibbs, Recine, & Moos, 1994). A program evaluation study in an inpatient detoxification unit found that aftercare attendance increased in the 2 years after such family interviews were introduced as a regular part of treatment as compared with the prior 2 years (Bale, 1993).

In the first controlled study of brief family intervention during inpatient treatment, Ino and Hayasida (2000) evaluated what they called a “before-discharge intervention method (BDIM)” in the inpatient hospital treatment of alcohol dependence in Japan. BDIM involves a family meeting in which family members convey to the alcoholic patient their concern about the alcoholic patient's problem drinking, their observations of past episodes of drinking problems, and their desire and support for abstinence. BDIM was delivered 3 to 10 days before hospital discharge after the patient had achieved some degree of stability following detoxification and had received some counseling. Among those living with a spouse, patients targeted to receive BDIM, as compared with their counterparts not targeted to get BDIM, had greater attendance by patients and by family members at hospital aftercare clinic sessions and/or self-help meetings. For the subgroup of patients in which both the patient and the spouse attended aftercare and/or self-help meetings, patients in the BDIM group had greater abstinence than those in the non-BDIM group. These favorable results for BDIM occurred under specific conditions in Japan that may not generalize to the U.S. For example, in the study by Ino and Hayasida (2000), over 60% of patients were receiving their first hospital admission for alcoholism treatment and the average length of hospital stay was 90 days (personal communication from Aro Ino, M.D., October 26, 2001). It is unknown what the effectiveness of BDIM or similar methods would be for more chronic patients being treated in the much briefer inpatient stays typical of U.S. programs.

We have been conducting a treatment development project to develop and pilot test a Brief Family Treatment (BFT) intervention to promote continued aftercare by patients receiving inpatient detoxification. This project follows the stage model of behavioral therapies development research proposed by Onken, Blaine, and Battjes (1997). Following Onken et al. (1997), the present study was Stage 1a of this treatment development project in which we developed the BFT treatment manual, treated an initial group of patients with BFT, and compared outcomes of BFT patients with a matched comparison group. In this exploratory quasi-experimental pilot study, we tested the prediction that substance abusing patients who received a brief family treatment (BFT) intervention during inpatient detoxification, as compared with matched patients who received treatment as usual (TAU), (a) would be more likely to begin aftercare in the 30 days after detox and (b) in the 3 months after detox would attend aftercare to a greater extent and have lower frequency of alcohol and drug use. Analyses not only tested these study predictions, they also examined whether clinically meaningful effect

sizes were observed that provide support for more controlled research on BFT (Onken et al., 1997).

METHOD

Participants

Participants were male patients (*N*=28) admitted to a hospital-based inpatient substance abuse detoxification (detox) unit in the northeastern U.S. The detox unit was part of a larger substance abuse treatment program that had multiple levels of care including a 30-day residential program, a modified therapeutic community, and an outpatient clinic. Men admitted for detox were eligible for the study if they met the following inclusion criteria: (a) age between 21 and 65 years old; (b) living with parent(s), wife, or female partner prior to admission; (c) their residence was within 45-minutes driving distance from the medical center; and (d) no evidence in the patient's medical record or admitting psychiatric assessment of a current organic mental disorder, schizophrenia, delusional (paranoid) disorder, or other psychotic disorder.

Study participants were drawn from 514 consecutive patients admitted for detox at the study site from February to July of 2000; 99 of these patients appeared to be eligible for the study based on information in their electronic medical record. The present study was the initial phase for a treatment development project (Onken et al., 1997) to evaluate a Brief Family Treatment (BFT) intervention to promote post-detox aftercare. The project social worker was available for part of 3 days each week (Monday to Wednesday) to do a BFT intervention with detox patients. During the study period the social worker conducted a BFT with 14 patients. At the end of the study period, a matched Treatment as Usual (TAU) comparison group of 14 patients was constituted. The TAU group was formed by reviewing all study-eligible patients admitted for detox during the study period and choosing, from those who did not receive BFT due to logistical factors, the patients who most closely resembled the 14 patients in the BFT group on the variables in Table 1. The individual who selected the matched TAU comparison group was not aware of the aftercare status or clinical outcome post-detox for any of the patients.

Sociodemographic and other background data for the 14 BFT patients and 14 TAU comparison group patients are presented in Table 1. The participants, on average, were in their late 40's, high school educated, mainly white, living with a wife or female partner, and mainly being detoxed for about 4 days from alcohol. They had had multiple prior detox admissions and half had a comorbid psychiatric disorder of posttraumatic stress disorder or major depressive disorder. Table 1 shows that matching procedures were quite successful, with values for background variables being very similar for the two groups. No differences between BFT and TAU groups on variables in Table 1 approached significance (all *p*'s > .30) except for day of the week on which the patient was admitted. TAU group patients were significantly more likely to be admitted on days (i.e., Wednesday to Friday) when the social worker was not available to deliver BFT.

Measures

Sociodemographic and diagnostic information—Most variables in Table 1 were obtained from patients' electronic medical record at the hospital where the study was conducted. The substance abuse and psychiatric disorder diagnoses, made according to the Diagnostic and Statistical Manual of Mental Disorders (4th ed.; DSM-IV; American Psychiatric Association, 1994), were taken from the admitting psychiatric assessment usually completed by a third-year psychiatric resident and from the discharge summary completed by the attending staff psychiatrist who was in charge of the patient's detox.

Measure to describe TAU detox program received by all study patients—The Drug and Alcohol Program Treatment Inventory (DAPTI; Swindle, Peterson, Paradise & Moos, 1995) was completed by detox unit staff to characterize TAU. The DAPTI assesses program goals and activities specific to eight treatment orientations as perceived by staff working in the program. The DAPTI has demonstrated promising subscale internal consistency, discriminant validity, concurrent validity, and the ability to distinguish between programs with independently identified orientations (Swindle et al., 1995).

Entry to aftercare post-detox and aftercare attendance—Information about entry to and attendance at an aftercare program came from the patient's electronic medical record supplemented by patient report. The study site was part of a large multi-site healthcare system with an integrated electronic medical record. Information on each patient was abstracted from the medical record progress notes and appointment records for the 3-month period post-detox. When the patient was interviewed 3 months after detox, additional information on help-seeking from providers outside the health system was obtained. A form was developed to code and collect this aftercare information.

Entry to aftercare post-detox was defined as the patient having a least one day of outpatient counseling or residential aftercare for substance abuse within 30 days of discharge from detox. Aftercare attendance was the number of days on which a patient had an outpatient counseling visit or was in residential aftercare for substance abuse during the 3-month period following discharge from inpatient detoxification. Readmission for inpatient detox was not considered aftercare.

Measure of frequency of substance use in the 3 months after discharge from detox—This was measured by the percentage of days the patient drank or used illicit drugs during the 3 months after discharge from detox as reported by the patient on the Timeline Follow-Back interview (TLFB; Sobell & Sobell, 1996). The family member with whom the patient was living at the time of the index detox also was interviewed with the TLFB for 61% (17/28) of the patients. TLFB retrospective daily reports of substance use show test-retest and patient-collateral correlations of $\geq .80$ for alcohol (Sobell & Sobell, 1996) and for illicit drugs including opioids, cocaine, and benzodiazepines (Fals-Stewart, O'Farrell, Rutigliano, Freitas, & McFarlin, 2000).

Procedures

Detox program TAU—Admission to the detox unit was reserved for patients who were: (a) at high risk for serious alcohol or drug withdrawal symptoms, (b) at risk for developing serious medical problems during withdrawal (but without acute medical problems at time of admission), and (c) without severe and persistent mental illness (such patients were detoxed on another ward in an acute psychiatry unit). Patients were admitted to the unit mainly for detoxification from alcohol and from opioid drugs.

The detox unit, with an average stay of a little over 3 days, focused on acute medical detoxification, a brief biopsychosocial assessment of patients' substance abuse and related problems, and aftercare planning. Unit staff consisted of a full-time and a part-time psychiatrist, a physician's assistant, nurses, and nursing assistants. The full-time psychiatrist and 2 registered nurses described their program on the DAPTI as being characterized most strongly by a medical orientation ($M \pm SD = 20.0 \pm 1.0$); to a lesser extent by a dual diagnosis orientation (14.7 ± 0.6) and an AA/12-Step orientation (11.3 ± 3.5); and not strongly characterized by cognitive-behavioral (9.7 ± 1.5), family systems (9.0 ± 1.7), psychodynamic (7.7 ± 3.8), therapeutic community (6.7 ± 1.5), or rehabilitation (1.3 ± 1.2) orientations.

The detox unit did not regularly contact or involve patients' family members, making it a suitable unit in which to evaluate the addition of BFT. We reviewed all progress notes in the electronic medical record for each patient's detox stay; we reviewed 15.0 ± 3.3 notes per patient for BFT and 15.2 ± 2.8 for TAU. These progress notes had almost no mention of any contact by detox staff with a family member other than the BFT intervention. Specifically, the only progress notes that mentioned possible contacts with a family member described: (a) a wife giving information to staff when she dropped patient off for admission (1 BFT patient); (b) staff tried to call patient's fiancée but could not reach her (1 TAU patient); (c) possible family meeting mentioned but no evidence this occurred (1 TAU patient); (d) wife had visited patient but no interaction of wife with staff was noted (3 TAU patients); (e) patient's report that wife planned to call psychiatrist but no indication that phone call occurred (1 BFT patient); and (f) resident's admission note recommending “communicating with patient's relatives”, but no indication that this occurred (2 BFT and 1 TAU patient).

BFT intervention—A part-time social worker assigned for part of her duties to do BFT in the detox unit specifically for the study. The social worker had a Master's degree and 10 years experience working with substance abusing patients and their families. The social worker was given a written outline of steps to follow in BFT, and cases were reviewed in a weekly meeting with the first author.

Briefly, the BFT intervention consisted of meeting with the patient and a family member (spouse or parent) with whom the patient lived to review and recommend potential aftercare plans for the patient. A phone conference was used in half the cases for which logistics prevented an in-person family meeting. The phone call occasionally included both patient and family member together but most often involved the social worker talking with the family member alone and conveying family recommendations about aftercare to the patient.

Specific steps in the BFT intervention were: (1) Identify patient admitted to detox who is living with a spouse or parent in a town within reasonable driving distance of the hospital [i.e., close enough patient could return to the hospital for aftercare]. (2) Get patient's permission to contact family member plus name, phone number and best time to call. (3) Call family member to set appointment for meeting. (4) Meet together with patient and family member to formulate aftercare plan. (5) If an in-person meeting is not feasible, conduct a phone conference with patient and family member about aftercare options and preferred plan. (6) Help make any practical arrangements for aftercare plan. (7). Call patient and family member 2 weeks after detox discharge to find out success of and troubleshoot aftercare plan.

Outcome data collection—Each patient and the family member with whom he had been living before detox were contacted to collect outcome data at 3 months after leaving the detox program. The purpose of the study was explained and each respondent signed a written informed consent approved by the Institutional Review Board. Each respondent completed the Treatment Received form and the TLFB about the 3-month period immediately following the patient's discharge from the index detox admission being examined in the present study.

Analyses

We compared BFT with TAU outcomes using McNemar Chi-square for categorical outcomes and paired sample t-tests (two-tailed) for continuous outcome measures. Due to the small sample size and the exploratory nature of the study, an alpha level of $p < .10$ (two-tailed) was required for statistical significance. The effect size r (Rosenthal, 1991) — a correlation coefficient for which $r = .10$ is considered a small effect, $r = .30$ a medium effect, and $r = .50$ a large effect (Cohen, 1988) — was used to interpret the magnitude of differences between BFT and TAU outcomes.

RESULTS

Entry to Aftercare Post-Detox

We predicted that patients who got BFT would be more likely to begin an aftercare program in the 30 days after detoxification. Results for the entire sample showed a trend for substance abusing patients who received the BFT intervention, as compared with a matched TAU comparison group that did not, to be more likely to enter an aftercare program in the 30 days after detox. Nearly twice the proportion of BFT cases (79%) than TAU cases (43%) entered aftercare. The magnitude of this difference favoring BFT over TAU was midway between a medium and a large effect size. The top half of Table 2 displays these results.

We also examined results for the 7 patients who had an in-person family meeting (not just a phone conference), and thus could be considered to have been exposed to the full BFT treatment as intended. All of these 7 BFT treatment-exposed patients entered aftercare while only 29% of the 7 matched TAU counterparts did. This difference was significant (p = .063), and the magnitude of this difference between BFT and TAU was a large effect size. The bottom half of Table 2 displays these results.

Aftercare Attendance

We also predicted that patients who got BFT would attend aftercare to a greater extent in the 3 months after detox. Results are shown in Table 3. For the entire sample, there was a trend for BFT patients, compared to TAU counterparts, to attend aftercare sessions on more days in the 3-month period following discharge from inpatient detox. For the 7 treatment-exposed patients, results were in the same direction but did not approach significance due to the very small sample size. For both groups of patients, the magnitude of the difference favoring BFT over TAU was midway between a medium and a large effect size.

Frequency of Substance Use

Our final prediction was that patients who got BFT would have a lower frequency of alcohol and drug use in the 3 months after detox. Results are shown in Table 4.For the entire sample, BFT patients had numerically fewer percent days substance use than TAU, but this difference did not approach significance and it reflected a small effect size. For the treatment-exposed sample, there was a trend for BFT patients, compared to TAU counterparts, to drink or use drugs on fewer days in the 3 months after detox. The magnitude of this difference was a medium effect size.

We also examined whether starting aftercare in the 30 days after detox led to less substance use regardless of whether the patient was in the BFT or TAU group. Patients who started aftercare in the 30 days after detox, compared to those who did not, drank or used drugs on significantly fewer days in the 3 months after detox (Mean ± SD percent days substance use = 22.3 ± 30.5, n = 17, aftercare; 56.1 ± 41.9, n = 11, no aftercare; t (26) = 2.46, p = .021, 2-tailed, r = .54). The magnitude of the difference favoring those who received aftercare over those who did not was a large effect size.

DISCUSSION

We developed a BFT intervention and implemented it in a large detox unit. Results revealed that male substance abusing patients who received BFT, as compared with a matched TAU comparison group that did not, showed a trend toward being more likely to enter an aftercare program and to attend more days of aftercare in the 3 months after detoxification. Although these results did not reach statistical significance, the magnitude of these differences favoring BFT over TAU was midway between a medium and a large effect size (r=.40).

We consider this effect size to be clinically meaningful. It compares favorably to the medium-size effect found in the larger literature favoring family-involved treatments over individual-based treatments in studies of alcoholism and drug abuse (O'Farrell & Fals-Stewart, 2001;Stanton & Shadish, 1997). It exceeds the level that Elashoff (1997) has argued is clinically meaningful, namely at least midway between a small and a medium effect size (i.e., $r \geq .20$). Thus, the present results show promise for BFT as a method to increase aftercare and provide support for more controlled research on BFT.

Results favoring BFT were weaker when the frequency of alcohol and drug use in the 3 months after detox was considered. Although BFT had fewer days substance use than TAU, this difference did not approach significance and reflected only a small effect size. Interestingly, when only treatment-exposed BFT patients who had an in-person family meeting were examined the less frequent substance use for BFT than TAU counterparts approached significance and reflected a medium effect.

Another source of support for a new intervention in a treatment development project comes from evidence that supports the underlying rationale for the treatment (Onken et al., 1997). For example, comparing BFT patients who had an in-person family meeting with TAU counterparts showed a considerably greater effect size for entering aftercare and for days of substance use than was observed for the intent to treat sample. Thus patients who actually received the planned in-person family meeting had better results, providing support for the concept of family involvement underlying BFT. This also suggests that overcoming obstacles to the in-person meeting could improve BFT results further. In addition, BFT assumes that aftercare will lead to less substance use. This rationale was supported by the finding that patients who entered aftercare regardless of treatment condition had significantly less substance use than those who did not as reflected in a large effect size.

The present results are consistent with prior work showing that family involvement in discharge planning leads to more aftercare use and less substance use after inpatient detoxification (Bale, 1993;Ino & Hayasida, 2000;Peterson, et al., 1994). The present results also provide further empirical support for the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standards on family involvement in substance abuse treatment. These standards require that, when available, a family member should be included at least in the assessment and treatment planning process for all substance abuse patients who seek help (Brown, O'Farrell, Maisto, Boies & Suchinsky, 1997).

Like prior studies of family involvement during detox, the present study lacked randomization. A randomized comparative study of BFT is the next step in our treatment development project. The present study included only male patients and all but one of the patients lived with a spouse or cohabiting partner. Future studies are needed to determine if the present results would generalize to female patients or those living with a parent or other family member. Finally, most of those studied here were alcoholic patients (with or without comorbid drug problems), so future work is needed with primary drug dependence patients without comorbid alcohol problems.

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Table 1

Characteristics of Male Substance Abusing Patients Who Received a Brief Family Treatment Intervention During Inpatient Detoxification and of a Matched Treatment as Usual Comparison Group

Characteristic	Brief Family Treatment Intervention Group (N=14)	Treatment as Usual Comparison Group (N=14)
Mean (SD) Age	49.7 (6.5)	48.9 (4.6)
Education - number (%)		
Less than high school or GED	2 (14%)	4 (29%)
High school or GED	7 (50%)	5 (36%)
Greater than high school or GED	5 (36%)	5 (36%)
Race-ethnicity - number (%)		
White	12 (86%)	11 (79%)
Black	2 (14%)	2 (14%)
Hispanic	0	1 (7%)
Number (%) employed	8 (57%)	7 (50%)
Number (%) living with		
Wife	8 (57%)	9 (64%)
Cohabiting female partner	5 (36%)	5 (36%)
Parent	1 (7%)	0
Distance from hospital - number (%)		
Closer (≤ 20-minute drive)	7 (50%)	7 (50%)
Farther (> 20-minute drive)	7 (50%)	7 (50%)
Mean (SD) days in detox unit	3.8 (0.7)	4.1 (0.7)
Mean (SD) prior detox admissions	3.8 (3.4)	3.2 (2.5)
Number (%) detoxed for		
Alcohol only	8 (57%)	8 (57%)
Alcohol and cocaine	2 (14%)	2 (14%)
Alcohol and heroin	1 (7%)	1 (7%)
Alcohol, cocaine and heroin	0	1 (7%)
Heroin or other opioid	2 (14%)	2 (14%)
Heroin and cocaine	1 (7%)	0
Number (%) with PTSD and/or MDD diagnosis	7 (50%)	7 (50%)
Attending physician		
Physician A	10 (71%)	8 (57%)
Physician B	4 (29%)	5 (36%)
Physician C	0	1 (7%)
Admission day of the week		
Monday	5 (36%)	3 (21%)
Tuesday	3 (21%)	2 (14%)
Wednesday	0	4 (29%)
Thursday	0	4 (29%)
Friday	0	1 (7%)
Saturday	3 (21%)	0
Sunday	3 (21%)	0

Note. PTSD = post-traumatic stress disorder; MDD = major depressive disorder.

Table 2

Percentage of Patients Entering Aftercare Post-Detox for Those Who Received a Brief Family Treatment (BFT) Intervention During Inpatient Detoxification and for a Matched Treatment as Usual (TAU) Comparison Group

Aftercare Post-Detox	BFT	TAU	Chi-Square	*p*	*r*
		Entire Sample Analysis (N = 14 per Group)			
Entered aftercare - *n* (%)	11 (79%)	6 (43%)	2.35	.125†	.41
Did not enter aftercare - *n* (%)	3 (21%)	8 (57%)			
		Treatment Exposed Sample Analysis (N = 7 per Group)			
Entered aftercare - *n* (%)	7 (100%)	2 (29%)	3.46	.063*	.70
Did not enter aftercare - *n* (%)	0 (0%)	5 (71%)			

† p<.15

* p<.10

Table 3

Days Attended Aftercare During the Three Months Post-Detox for Those Who Received a Brief Family Treatment (BFT) Intervention During Inpatient Detoxification and for a Matched Treatment as Usual (TAU) Comparison Group

	BFT	TAU	*t*-test value	*p*	*r*
		Entire Sample Analysis (N = 14 per Group)			
Mean days aftercare	10.4	4.1			
(SD)	(12.7)	(6.5)	1.59	.137[†]	.37
		Treatment Exposed Sample Analysis (N = 7 per Group)			
Mean days aftercare	12.1	4.1			
(SD)	(15.2)	(8.6)	1.31	.237	.39

[†] p<.15

[*] p<.10

Table 4

Percent Days Drinking or Drug Use During the Three Months Post-Detox for Those Who Received a Brief Family Treatment (BFT) Intervention During Inpatient Detoxification and for a Matched Treatment as Usual (TAU) Comparison Group

	BFT	TAU	*t*-test value	*p*	*r*
		Entire Sample Analysis (N = 14 per Group)			
Mean % days substance use	32.1	39.0			
(SD)	(36.6)	(41.5)	0.56	.583	.11
		Treatment Exposed Sample Analysis (N = 7 per Group)			
Mean % days substance use	27.9	47.8			
(SD)	(32.7)	(43.8)	1.75	.130†	.31

† p<.15

* p<.10