

Can Encouraging Substance Abuse Patients to Participate in Self-Help Groups Reduce Demand for Health Care? A Quasi-Experimental Study

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Background: Twelve-step-oriented inpatient treatment programs emphasize 12-step treatment approaches and the importance of ongoing attendance at 12-step self-help groups more than do cognitive-behavioral (CB) inpatient treatment programs. This study evaluated whether this difference in therapeutic approach leads patients who are treated in 12-step programs to rely less on professionally provided services and more on self-help groups after discharge, thereby reducing long-term health care costs.

Methods: A prospective, quasi-experimental comparison of 12-step-based ($N = 5$) and cognitive-behavioral ($n = 5$) inpatient treatment programs was conducted. These treatments were compared on the degree to which their patients participated in self-help groups, used outpatient and inpatient mental health services, and experienced positive outcomes (e.g., abstinence) in the year following discharge. Using a larger sample from an ongoing research project, 887 male substance-dependent patients from each type of treatment program were matched on pre-intake health care costs ($N = 1774$). At baseline and 1-year follow-up, patients' involvement in self-help groups (e.g., Alcoholics Anonymous), utilization and costs of mental health services, and clinical outcomes were assessed.

Results: Compared with patients treated in CB programs, patients treated in 12-step programs had significantly greater involvement in self-help groups at follow-up. In contrast, patients treated in CB programs averaged almost twice as many outpatient continuing care visits after discharge (22.5 visits) as patients treated in 12-step treatment programs (13.1 visits), and also received significantly more days of inpatient care (17.0 days in CB versus 10.5 in 12-step), resulting in 64% higher annual costs in CB programs (\$4729/patient, $p < 0.001$). Psychiatric and substance abuse outcomes were comparable across treatments, except that 12-step patients had higher rates of abstinence at follow-up (45.7% versus 36.2% for patients from CB programs, $p < 0.001$).

Conclusions: Professional treatment programs that emphasize self-help approaches increase their patients' reliance on cost-free self-help groups and thereby lower subsequent health care costs. Such programs therefore represent a cost-effective approach to promoting recovery from substance abuse.

Key Words: Aftercare, Self-Help Groups, Health Care Cost-Offsets, Alcoholics Anonymous, Inpatient Treatment.

PRIMARILY BECAUSE OF the advent of managed care, mental health treatment professionals in the United States are facing increasing pressure to reduce the costs of the care they provide. Yet because of their ethical concern for the welfare of their patients, clinicians do not wish to compromise quality of care simply because it reduces cost. One clinical practice that may help reconcile the

frequently conflicting goals of cost containment and good outcome is to promote involvement in cost-free self-help groups such as Recovery Inc. (Murray, 1996) and Alcoholics Anonymous (AA; Emrick et al., 1993). This article describes a quasi-experimental study that evaluates whether such a clinical strategy can reduce demand for mental health care (thereby reducing costs) yet still maintain positive patient outcomes.

Several experimental studies have demonstrated that clinicians can influence whether or not patients become involved in self-help groups. For example, substance-dependent homeless individuals randomly assigned to a treatment program that emphasized 12-step approaches were more than seven times more likely than controls (who received detoxification services only) to be involved in 12-step self-help groups 6 months after discharge (Devine et al., 1997). Another study (Sisson and Mallams, 1981) demonstrated that alcohol outpatients randomly assigned to an intensive referral to self-help groups (an in-session phone

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call to an active group member who escorted the patient to his or her first meeting) were significantly more likely to become group affiliates than were controls, who received a standard referral (a list of meeting locations and times). Finally, the Project Match Research Group (1997) demonstrated that alcohol abuse patients randomly assigned to 12-step facilitation counseling attended more AA meetings than patients randomly assigned to two psychotherapies that did not emphasize the importance of self-help group participation. Importantly, this study also showed that individuals in the 12-step facilitation condition improved similarly on most drinking-related outcomes as individuals in the other two conditions, and were somewhat more likely to be abstinent.

The potential for self-help group involvement to reduce use and costs of health care has been evaluated in three prospective studies. Edmunson and colleagues (1982) demonstrated that discharged psychiatric inpatients randomly assigned to a patient-led self-help support network were half as likely as controls to be rehospitalized over a 10-month period. Similarly, alcohol-abusing individuals initially assigned to attend community-based AA meetings had 10% lower alcohol-related health care costs (though somewhat worse clinical outcomes) over the following 2 years than individuals initially assigned to an inpatient treatment unit followed by AA meetings (Walsh et al., 1991). A potential cost offset attributable to AA participation also was identified in a 3-year longitudinal study of previously untreated individuals with alcohol problems (Humphreys and Moos, 1996). This study found that individuals who initially sought help from AA had drinking-related and psychosocial outcomes similar to those of individuals who initially sought out a professional outpatient service provider, but had 45% lower alcohol-related health care costs over a 3-year period.

Taken together, the studies reviewed suggest that if clinicians encourage their substance-dependent patients to participate in self-help groups, patients may rely more on self-help groups and less on professional services. This might lower health care costs without compromising patient outcomes. One natural context in which to test this conjecture is the interval following discharge from inpatient substance abuse treatment. If clinicians can successfully engage discharged inpatients with AA, Cocaine Anonymous (CA), or Narcotics Anonymous (NA), these patients may require less additional professional services from the treatment program to achieve good long-term outcomes. Phrased as a hypothesis, we suggest that patients treated in inpatient units that strongly emphasize 12-step principles and 12-step self-help group involvement will have higher levels of engagement with self-help groups and lower utilization of professional mental health services than patients treated in inpatient units that place little emphasis on 12-step principles and 12-step self-help involvement.

To test this hypothesis, we employ a quasi-experimental design (Cook and Campbell, 1979) in which the focus of

treatment selected and applied by clinicians (12-step or CB) is the independent variable, and patients' self-help group involvement, service utilization, and costs at 1-year follow-up are key dependent variables. Because cost concerns should always be weighed against patient outcomes, we also compare the two treatments on substance use and psychiatric outcomes. To maximize external validity, the study is conducted in a real-world clinical setting with a large, national sample of substance abuse patients.

METHODS

Program Sample

A nationwide sample of 10 US Department of Veterans Affairs (VA) inpatient substance abuse treatment programs was examined. Sites were selected based on their strongly exemplifying either 12-step oriented ($N = 5$) or cognitive-behaviorally (CB) oriented ($N = 5$) treatment, their geographic dispersion around the US, and their large patient pool. The validity of the classification of program type is demonstrated in detail elsewhere (Moos et al., 1999; Ouimette et al., 1997). Briefly, the 12-step programs spent an average of 39% of treatment time on 12-step activities such as AA, CA, or NA group meetings, working the 12 steps, and reading the "Big Book," whereas CB programs spent only 4% of treatment time on such activities. CB programs spent an average of 44% of treatment time on cognitive-behavioral treatment activities such as cognitive skills training and CB psychotherapy, compared with an average of only 7% of treatment time in 12-step oriented treatment programs. Other differences between programs were that staff of the 12-step oriented programs believed more strongly in the disease model of addiction, endorsed 12-step treatment goals more strongly, and were more likely to be in recovery from addiction than were staff in CB programs (Moos et al., 1999; Ouimette et al., 1997).

Patient Sample

The sample of 1774 participants was drawn from a larger study of VA inpatients who had been assessed at intake and 1-year follow-up (99.5% diagnosed with substance dependence, 100% low-income males, 49% African-American; see Moos et al., 1999). Starting with the 2045 men who had been treated in either a 12-step or cognitive-behavioral (CB) substance abuse treatment program, a sample of 1774 participants was created as follows: To strengthen the basis for causal inference, the samples of CB and 12-step program patients were matched on the cost of their mental health care in the year prior to intake. An equal number of patients was randomly sampled from each program type among those patients who had no mental health care costs in the prior year, \$1–2000 in costs, \$2001–4000 in costs, \$4001–6000 in costs, and so on in \$2000 intervals. This procedure produced a sample of 887 CB patients and 887 12-step patients with very similar health care utilization prior to treatment intake.

Procedure

Patients were asked to participate by an on-site research assistant who was independent from the service delivery staff. In the larger overall study, about 90% of patients asked to participate agreed to do so (Moos et al., 1999). Consecutive male admissions were sampled except when patient volume was prohibitively high, in which case every second or third admission was sampled. Participants completed an inventory at baseline, and a nearly identical inventory 1 year after discharge. All patients were included in the follow-up component of the study, regardless of how long they stayed in treatment. In the larger overall study, the follow-up rate among patients not known to have died was about 84% (Moos et al., 1999). The inventory covered demographic information and other areas described below.

Measures

The following data were gathered at treatment intake and 1-year follow-up:

Clinical Outcomes. Participants reported on whether they were *abstinent from alcohol and drugs in the past 3 months*; whether they were *free of substance abuse-related problems in the past 3 months* as reflected by responses of “never” to each of 15 items covering health problems, job problems, legal problems, money problems, and the like; whether they experienced *significant psychological distress* as measured by responses of “quite a bit” or “extremely” on 5 or more of 12 items (such as “feelings of worthlessness,” “thoughts of ending your life,” “spells of terror or panic”) from the Depression and Anxiety scales of the Brief Symptom Inventory (BSI; Derogatis, 1993); and whether they experienced *significant psychiatric symptoms* as measured by responses of “quite a bit” or “extremely” on 4 or more of 10 items (such as “feeling that you are watched or talked about by others,” or “the idea that someone can control your thoughts”) from the BSI Paranoid Ideation and Psychoticism scales. In research we have conducted with different samples of VA substance abuse patients, these BSI cutting scores reliably distinguished patients who did and did not have severe comorbid psychopathology (Moos et al., 2000).

Self-Help Group Involvement and Costs. Patients were asked about their involvement in 12-step self-help groups. Five-point items referring to the past 3 months were used to measure attendance at meetings (0 = none, 1 = 1–9 meetings, 2 = 10–19 meetings, 3 = 20–29 meetings, 4 = 30 or more meetings) and frequency of talking with an AA/CA/NA sponsor (0 = never, 1 = less than once per month, 2 = once or twice a month, 3 = once a week, 4 = several times a week). Because AA, CA, and NA are free of charge, no financial cost was assigned to these 12-step activities.

Inpatient and Outpatient Service Utilization and Costs. Data on the mental health care utilization by each patient in the year before and the year following inpatient treatment were extracted from the VA’s centralized databases. Costs were calculated from VA budgets in 1999 US dollars, with outpatient mental health care costing \$70/visit and inpatient mental health care costing \$620/day. Mental health care was defined as treatment provided for patients’ substance abuse and (when present) other psychiatric disorders.

RESULTS

Significance Level

According to Cohen (1992), practically unimportant differences often attain the $p < 0.05$ significance criterion in large samples such as that employed here, particularly when multiple tests are conducted. Hence, a more conservative significance standard of $p < 0.001$ was employed in all analyses.

Comparison of 12-Step and CB Treatment Program Patients at Baseline

Chi-square analyses were used to compare patients on key prognostic variables at intake. Patients in each program type were remarkably similar, with no significant differences for the proportion of patients who were married (18.7% in CB, 20.3% in 12-step), employed (24.2% in CB, 25.3% in 12-step); diagnosed with a comorbid psychiatric disorder (23.1% in CB, 17.7% in 12-step); abstinent (2.9% in CB, 1.0% in 12-step); free of substance abuse problems (3.7% in CB, 1.5% in 12-step); free of significant psychiatric symptoms (71.5% in CB, 66.2% in 12-step); or free of significant psychological distress (64.1% in CB, 61.1% in 12-step).

Table 1. One-year Formal and Informal Care Utilization and Substance Use and Psychiatric Outcomes of 1774 Substance-Dependent VA Inpatients

	Treatment type		Statistic F ($df = 1,1772$)
	Cognitive-behavioral ($N = 887$) Mean (SD)	12-step-oriented ($N = 887$) Mean (SD)	
Self-help group involvement			
Frequency of talking with AA/NA sponsor ^a	0.5 (1.2)	1.1 (1.6)	72.90*
Frequency of attending group meetings ^b	1.0 (1.4)	1.4 (1.5)	27.28*
Mental health care utilization			
No. outpatient visits	22.5 (50.2)	13.1 (29.5)	22.77*
No. inpatient days	17.0 (45.3)	10.5 (31.1)	12.69*
Post-discharge care costs (in \$1000s)	12.1 (28.7)	7.4 (19.9)	16.28*
	%	%	χ^2 ($df = 1$)
Clinical outcomes			
Abstinent from drugs and alcohol	36.2	45.7	16.56*
Free of substance abuse-related problems	28.2	31.0	NS
Free of significant psychological distress	74.7	77.5	NS
Free of significant psychiatric symptoms	77.1	78.7	NS

* $p < 0.001$.

NS, not significant.

Groups did not differ significantly on any of the above variables at intake.

^a Response options 0–4 ranged from “Never” to “Several times a week”.

^b Response options 0–4 ranged from “None” to “30 or more.”

One-way analyses of variance were used to compare patients in each treatment type on continuous variables reflecting prior utilization and costs of self-help groups and professional mental health services. At intake, there were no significant differences between patients in each type of program on self-help group meeting attendance (mean = 0.7, SD = 1.1 in CB; mean = 0.7, SD = 1.0 in 12-step) or frequency of contact with an AA/CA/NA sponsor (mean = 0.2, SD = 0.8 in CB; mean = 0.3, SD = 0.9 in 12-step). As expected given the aforementioned matching of patients on previous health care utilization, there also were no significant differences on past year inpatient mental health days (mean = 3.9, SD = 13.3 in CB; mean = 3.9, SD = 13.2 in 12-step); outpatient mental health visits (mean = 5.5, SD = 11.6 in CB; mean = 4.0, SD = 11.2 in 12-step); or treatment costs (mean = \$2779, SD = \$8385 in CB; mean = \$2685, SD = \$8370 in 12-step).

Self-Help Group Involvement and Professional Service Utilization After Inpatient Treatment

Analyses-of-variance indicated that being treated in a 12-step program significantly predicted greater frequency of talking with a sponsor and more frequent attendance at 12-step self-help group meetings at 1-year follow-up (see Table 1). Among all patients studied, 35.7% of 12-step treatment patients talked with a sponsor and 59.4% at-

tended 12-step group meetings in the 3 months prior to follow-up, compared with 17.4% and 48.0% of CB patients, respectively.

Turning to professional service utilization, CB patients used significantly more outpatient and inpatient mental health care between discharge and follow-up (see Table 1). For both types of care, utilization was about 70% higher after CB treatment. Total costs of mental health care in the year following discharge were 64.0% higher for CB patients (mean = \$12,129; SD = \$28,681) than for 12-step patients (mean = \$7,400; SD = \$19,886). This difference of \$4,729 per patient was statistically significant ($p < 0.001$).

Clinical Outcome

Because higher treatment costs may be justifiable if outcomes are superior, CB and 12-step patients were compared on 1-year outcomes using χ^2 (see Table 1). Patients treated in 12-step programs had significantly higher rates of abstinence (45.7%) than did patients treated in CB programs (36.2%). There were no significant differences between treatments on the other three clinical outcomes.

Secondary Analyses

We evaluated whether the main finding of the study, the higher rate of mental health utilization after discharge in CB programs, was an artifact of a single CB or 12-step program being an extreme outlier. This possibility was ruled out when the 10 sites were ranked in terms of average mental health costs per patient: The CB programs were rated first, second, fourth, fifth and sixth in postdischarge costs.

To determine whether the higher use of self-help groups and sponsors in 12-step programs was an artifact of availability in the cities in which the programs were based, we contacted the offices of AA, CA, and NA in each city and obtained their local meeting directories. Both sets of cities were similar in terms of the number of 12-step group meetings available per week, with an average of about six AA/CA/NA meetings per square mile (mean = 5.8, SD = 4.5 for 12-step; mean = 6.4, SD = 3.5 for CB; difference not statistically significant).

DISCUSSION

All clinicians hope that their substance abuse patients will maintain gains made during the most intensive phase of treatment; this is the purpose of continuing care. This quasi-experimental evaluation examined two treatments that produce roughly comparable clinical outcomes but substantially different patterns of postdischarge care utilization. When treatment emphasizes 12-step approaches, patients subsequently rely relatively more on 12-step groups, thereby reducing health care costs. In contrast, when treatment emphasizes CB approaches, patients subsequently rely relatively more on professional services,

which produces higher health care costs. In the current health care climate, a clinical strategy that reduces the ongoing health care costs of substance abuse patients by 64% while also promoting good outcome deserves serious attention.

These results can be interpreted properly only with the study's goals and context clearly in mind. This study was not a comparison of the relative benefits of patients' utilizing professional services versus participating in self-help groups after discharge. In the first place, the data showed that the focus of treatment resulted only in *relatively* greater reliance on 12-step groups or professional care rather than exclusive utilization of one resource or the other by all patients. Many patients treated in 12-step programs and CB programs both participate in 12-step groups and utilize additional professional services, and this pattern of help-seeking is positively associated with better outcomes (Ouimette et al., 1998). The present results support our initial hypothesis that emphasizing 12-step approaches during inpatient treatment lessens subsequent reliance on professional care, but they in no way imply that professional services were not beneficial to those 12-step and CB program patients who accessed them.

Two randomized clinical trials have demonstrated that standardized clinical interventions can substantially increase substance abuse patients' likelihood of affiliating with self-help groups (Project Match Research Group, 1997; Sisson and Mallams, 1981). Although neither of these studies provided cost estimates, the present data indicate that the cost of adding an intensive self-help referral and connection component to a program potentially could pay for itself by reducing reliance on professional services. This would be an ideal question for a future clinical trial. If the cost-effectiveness of such self-help facilitation interventions were demonstrated, clinicians and payors could place high priority on implementing empirically validated self-help group referral techniques (e.g., Sisson and Mallams, 1981) in substance abuse treatment, and regard affiliation with self-help groups as a crucial outcome to achieve and monitor.

Three prospective studies have now found an apparent health care cost-offset attributable to 12-step self-help group participation, despite using different designs and samples. Given that the effect appears robust, it seems appropriate to speculate on the mechanisms that bring it in about. First, the helping techniques of professional counselors and self-help groups/sponsors overlap to some significant though unknown extent. This conjecture would help account for the present results, as well as Galanter, Castenada, and Salamon's (1987) finding that patients randomly assigned to traditional treatment experience outcomes comparable to those of patients assigned to self-help oriented treatment programs with lower professional staffing levels and higher expectations for patients to engage in mutual help activities. Both professionals and self-help group members can provide encouragement, serve as role

models, reinforce the importance of abstinence, and encourage effective coping with negative emotions and experience. Patients who find such needs met by accessible, cost-free self-help groups and sponsors probably are less likely to seek out a professional to get those same needs met. And, because self-help group participation is associated with improved coping, enhanced friendship networks, and reduced substance use (Emrick et al., 1993; Humphreys et al., 1999; Humphreys and Moos, 1996; Project Match Research Group, 1997), a patient's decision to rely on self-help groups can help promote positive outcomes.

The power of social networks among both professionals and self-help group members also may help produce the results found here and in our other study of self-help-related cost offsets (Humphreys and Moos, 1996). Many health care professionals and 12-step groups members may be more likely to refer troubled people to individuals they know within their respective helping networks than to individuals outside their network (e.g., a primary care doctor may refer an addicted patient to a psychiatrist, whereas an NA member may refer the same person to more meetings or a skilled sponsor). Hence, the mode of help with which an individual initially comes into contact via personal preference, referral, or chance factors, often may determine the mode of help (self-help groups or professional services) relied upon more heavily in the long-term.

The strengths and weakness of this quasi-experiment can be broken down into those relating to internal and external validity. Patients in each treatment condition were matched on a key variable (prior health care utilization), and were not different on any measured prognostic variable. Further, because the nearest 12-step and CB programs studied here were hundreds of miles apart, patients received whatever form of treatment their local VA facility offered rather than being able to self-select into conditions. At the same time, patients were not randomly assigned to conditions, so there may be an unmeasured pre-existing selection difference between groups. A replication in a randomized clinical trial would thus increase confidence in the present results. In the interim, it is worth remembering that randomized clinical trials in other research areas (e.g., chronic mental illness; see Edmunson et al., 1982) have shown that connecting patients to self-help organizations after discharge from inpatient treatment reduces subsequent use of professional services.

In terms of external validity, the quasi-experimental approach employed here was conducted on a real-world sample of patients and clinicians, making its results more clearly generalizable to practice. At the same time, the focus on low-income men and on patients treated in inpatient units raises questions about whether these results would hold in other samples. In that regard, it is encouraging that a 3-year prospective study of a sample of alcohol abuse patients with quite different characteristics (50% female, 52.2% employed, 86.6% Caucasian) showed that individuals initially seeking AA had similar outcomes and

about 45% lower health care costs than did individuals initially seeking help from a professional outpatient service provider (Humphreys and Moos, 1996). Whether these results would hold in other populations (e.g., elderly problem drinkers, health maintenance organization enrollees) remains an important open question for future research.

An additional question of generalizability is whether encouraging 12-step self-help group attendance in CB programs would reduce health care utilization to the same extent as it would in 12-step programs, where the overlap in the content between aftercare sessions and AA/CA/NA meetings presumably is greater. A useful empirical approach to answering this question would be to randomize CB patients at discharge to encouragement to attend 12-step groups, encouragement to attend CB self-help groups (e.g., Moderation Management, SMART Recovery), or encouragement to rely exclusively on professional care. Such a study would both build on the knowledge base generated here and also have obvious health care policy relevance.

Resources for addiction services in the US have been scaled back in the public and private sectors (D'Aunno and Vaughn, 1995; Etheridge et al., 1995), leaving clinicians the formidable challenge of continuing to help patients achieve positive outcomes under the constraints of tighter budgets. Despite this situation, the present study allows us to close with an optimistic conclusion. When considered in combination with other studies of this issue (Galanter et al., 1987; Humphreys and Moos, 1996; Walsh et al., 1991), the results of the present study suggest that by emphasizing self-help approaches, 12-step substance abuse treatment programs are able to decrease health care costs and increase the likelihood that their patients will improve at the same time.

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