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## Helping Other Alcoholics in Alcoholics Anonymous and Drinking Outcomes: Findings from Project MATCH\*

MARIA E. PAGANO, PH.D.<sup>†</sup>, KAREN B. FRIEND, PH.D.<sup>†</sup>, J. SCOTT TONIGAN, PH.D.<sup>†</sup>, and ROBERT L. STOUT, PH.D.<sup>†</sup>

Department of Psychiatry and Human Behavior, Brown University Medical School, Box G-BH, Providence, Rhode Island 02912

### Abstract

**Objective**—Although Alcoholics Anonymous (AA) is the largest mutual-help organization for alcoholics in the world, its specific mechanisms that mobilize and sustain behavior change are poorly understood. The purpose of this study is to examine prospectively the relationship between helping other alcoholics and relapse in the year following treatment for alcohol use disorders.

**Method**—Data were derived from Project MATCH, a longitudinal prospective investigation of the efficacy of three behavioral treatments for alcohol abuse and dependence. Kaplan-Meier survival estimates were used to calculate probabilities of time to alcohol relapse. To identify the unique value of helping other alcoholics when controlling for the number of AA meetings attended, proportional hazards regressions were conducted to determine whether the likelihood of relapse was lower for those who were helping other alcoholics.

**Results**—There were no demographic differences that distinguished participants in regard to involvement in helping other alcoholics, with the exception of age; those who were helping other alcoholics were, on average, 3 years older than those who were not helping alcoholics. Those who were helping were significantly less likely to relapse in the year following treatment, independent of the number of AA meetings attended.

**Conclusions**—These findings provide compelling evidence that recovering alcoholics who help other alcoholics maintain long-term sobriety following formal treatment are themselves better able to maintain their own sobriety. Clinicians who treat persons with substance abuse disorders should encourage their clients to help other recovering alcoholics to stay sober.

Alcohol use disorders represent a major public health problem in the United States. Approximately 7.4% of the U.S. population meet the diagnostic criteria for alcohol abuse or dependence (Grant et al., 1994), a proportion that results in substantial costs to the individual and society, among them elevated morbidity and mortality rates, traffic accidents, injuries, crime, broken families, domestic violence and fetal alcohol syndrome (Gmel and Rehm, 2003; Greenfield, 1998; Harwood, 2000; Hingson and Howland, 1993; Hingson and Winter, 2003; Theobald et al., 2001).

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<sup>†</sup>Correspondence may be sent to Maria E. Pagano at the above address, or via [Maria\\_Pagano@Brown.edu](mailto:Maria_Pagano@Brown.edu). Karen B. Friend and Robert L. Stout are with the Decision Sciences Institute, Pacific Institute for Research and Evaluation, Providence, RI. J. Scott Tonigan is with the Department of Psychology, University of New Mexico, Albuquerque, NM.

Recent years have witnessed an explosion of new treatment approaches for alcoholism. Pharmacotherapies such as naltrexone and acamprosate appear to reduce cravings, urges to drink and the reinforcing qualities of alcohol (Miller et al., 2003). Many new behavioral interventions have also been developed: brief counseling, behavioral self-management, relationship therapies, coping skill training, insight and exploratory therapies, confrontational approaches, milieu therapy, educational programs and 12-step facilitation (Miller et al., 2003).

Pharmacological and behavioral interventions can be effective as long as individuals with alcohol use disorders remain engaged in treatment (Miller et al., 2003). By the end of the first year after treatment, however, the majority of clients have resumed pretreatment levels of abuse and dependence, with relapse rates as high as 90% (Brownell et al., 1986; Miller and Sanchez-Craig, 1996). Given these high relapse rates, there is a critical need for identifying affordable and accessible strategies to help clients maintain their abstinence from alcohol.

Most alcohol treatment programs in the United States encourage clients to participate in Alcoholics Anonymous (AA) and associated 12-step programs, such as Narcotics Anonymous (NA), both during and after treatment. Originating in 1933 in Akron, Ohio, AA has grown to become the largest and most popular mutual-help program in the U.S. for individuals with alcohol problems (Emrick, 1999). The frequency at which AA meetings occur on any given day in the majority of American cities and the absence of membership fees contribute to the popularity of this community-based resource.

The limited but advancing empirical literature examining the impact of AA, most commonly measured as frequency counts of AA meeting attendance, has generally concluded that participation in AA may be modestly associated with improved psychosocial functioning and drinking outcomes, possibly in a dose-response relationship (Cross et al., 1990; Emrick, 1999; Humphreys et al., 1996; Montgomery et al., 1995; Pisani et al., 1993; Tonigan, 1995; Tonigan et al., 1996a; Zywiak et al., 1999). Notable biases exist, however, including study methodological quality and sample selection (Kownacki and Shadish, 1999). There is still little understanding, moreover, of what involvement in AA specifically entails. This involvement has been determined to be a multidimensional construct, one component of which is AA meeting attendance (Allen, 2000; Caldwell and Cutter, 1998; Gilbert, 1991; Morgenstern et al., 1997; Owen et al., 2003; Snow et al., 1994; Tonigan et al., 1995). Other identified components are faith development (Horstmann and Tonigan, 2002), social networks (Kaskutas et al., 2002; Longabaugh et al., 1998) and several AA-related practices, such as declaring a Home Group and engaging in conversations with AA members both before and after meetings (Caldwell and Cutter, 1998).

There may, however, be such other important “active ingredients” of AA involvement as sponsorship and twelfth-step work. There has been little exploration of the relationship between the specific activities in which AA members participate as part of the organization and long-term changes in drinking behaviors. Additional investigations are therefore needed to help identify which aspects of AA are most related to maintaining abstinence.

An important activity that AA promotes is alcoholics helping other alcoholics to stay sober through involvement in service work (Nealon-Woods et al., 1995). Although the benefits of having a sponsor are apparent to the recipient (Caldwell and Cutter, 1998; Kingree, 1997; Morgenstern et al., 1996; Sheeren, 1988), the AA literature encourages alcoholics to help other alcoholics primarily as a method of strengthening their own sobriety (i.e., “Helping others is the foundation stone of recovery” [AA, 2001, p. 97]). A continuing theme throughout AA principles is the critical importance of recovering alcoholics shifting their

focus from self to others (Carroll, 1993; McGrady, 2003). Through sponsorship and twelfth-step work, service involvement comprises a broad range of activities that involve directly helping other struggling alcoholics. Although there is no formal definition of sponsorship, sponsors typically have some regular contact with their sponsees to provide guidance and encouragement, to discuss what challenges sponsees may be facing and to reinforce the AA teachings and principles (Humphreys and Noke, 1997). Twelfth-step work also involves helping alcoholics more generally, although the manner of help is not concretely defined. It is described as taking on “the unspectacular but important tasks that make good twelfth-step work possible, perhaps arranging for the coffee and cake after the meeting, where so many skeptical, suspicious newcomers have found confidence and comfort in the laughter and talk. This is twelfth-step work in the best sense of the word” (AA, 1981, p. 110).

Important research has begun to shed light on whether providing help to others increases the chances of sustained recovery from substance use disorders. In a prospective investigation of 503 inner-city drug users recruited from the community, Crape et al. (2002) report that being a sponsor was related to not using drugs at baseline (odds ratio [OR]  $\approx 7$ ) and to abstinence at 1-year follow-up (OR = 3.2), after adjusting for various demographic and clinical variables, including AA/NA attendance. They also suggest that being a sponsor may have increased abstinence likelihood because it was associated with greater treatment involvement and with motivation for lifestyle change. In a cross-sectional investigation of 200 alcoholics in recovery, Zemore and Kaskutas (2003) found the total amount of time spent in community-related helping was significantly related to length of sobriety ( $r = 0.40$ ).

No study to date has prospectively investigated whether helping others through sponsorship or twelfth-step work is helpful or deleterious to sustaining one’s own alcohol sobriety. It is unclear whether empirical evidence supports the sentiment often heard in AA meetings: “You can’t keep it unless you give it away.” It is possible that helping other alcoholics may reinforce the positive benefits of sobriety and the negative consequences of drinking, the recollections of which tend to fade as time since the last drink increases. It is also possible, however, that being a sponsor can result in worse outcomes through the influence of recurrent drinking episodes of those being sponsored. Analyzing the relationship between helping other alcoholics and drinking outcomes using complex statistical methodologies, such as time-to-event analyses, can help determine whether alcoholics who are helping other alcoholics following treatment have better longer term alcohol outcomes than those who are not. These advanced methods also enable exploration of the unique contribution of helping other alcoholics on drinking outcomes aside from the frequency of AA meeting attendance.

Using prospectively collected data from Project MATCH, one of the largest clinical trials of alcoholism treatment ever undertaken, this study addresses three basic questions: (1) Do participants who become involved in helping other alcoholics differ in their personal characteristics (i.e., demographic information and severity of drinking behavior) in comparison with those who are not involved in helping others? (2) Do alcoholics who become involved with helping other alcoholics during treatment have better long-term alcohol outcomes than those who do not? (3) What is the relationship between helping other alcoholics and long-term drinking outcomes when the number of AA meetings attended is considered?

## Method

Data were derived from Project MATCH—a prospective, longitudinal investigation of the efficacies of three behavioral treatments for alcohol use disorders that were delivered over 12 weeks (Longabaugh and Wirtz, 2001). The three theoretically derived psychosocial interventions selected for use in this randomized clinical trial of client-treatment matching

were Cognitive-Behavioral Therapy (CB), Motivational Enhancement Therapy (MET) and Twelve Step Facilitation (TSF). The overall aims, organizational structure and research design of Project MATCH are detailed elsewhere (Del Boca et al., 2003). Although Project MATCH was not a study of the effectiveness of AA, the use of a large and diverse sample in the study provides a unique opportunity to examine AA involvement after formal alcoholism treatment.

A total of 1,726 patients with alcohol abuse and dependence disorders participated in the study. There were two study arms: outpatient and aftercare. Patients in the former were recruited directly from the community or outpatient centers, patients in the latter from intensive inpatient or day-hospital treatments. Inclusion criteria consisted of either current (for the outpatient arm) or 3 months prior to treatment (for the aftercare arm) alcohol abuse or dependence according to the criteria of the Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (DSM-III-R; American Psychiatric Association, 1987). Among the criteria excluding patients were having a current DSM-III-R diagnosis of dependence for sedative/hypnotic drugs, stimulants, cocaine or opiates; having taken these drugs intravenously during the previous 6 months; being currently dangerous to oneself or others; exhibiting symptoms of acute psychosis; and/or having severe organic impairment. Participants provided informed consent, and the procedures used were in accordance with the standards of the Committee on Human Experimentation with the Helsinki Declaration of 1975 (Project MATCH Research Group, 1993).

## Measures

**Alcohol use**—Alcohol use was measured as the number of drinks per drinking day, using the semistructured Form 90 (Miller, 1996). The Form 90 is a calendar-based daily drinking estimation method that incorporates a grid-averaging approach to provide a comprehensive and efficient assessment of a person's drinking over a designated period of time (90 days in this study). It has demonstrated test-retest reliability for treatment-seeking alcoholics (Tonigan et al., 1997) and problem use of illicit drugs (Westerberg et al., 1998). Participants were assessed at baseline and at 3, 6, 9, 12 and 15 months. Time to first drink from the nominal end of treatment at Month 3, a primary time-to-event outcome measure used in Project MATCH (Babor et al., 2003), was considered a relapse in this study.

**Helping other alcoholics**—Whether or not a participant was helping other alcoholics was assessed with the Alcoholics Anonymous Involvement (AAI) scale. The AAI scale was developed for use by Project MATCH to measure AA participation in terms of both the degree to which a participant is “working the program” (e.g., having a sponsor and attending meetings) and his or her commitment to the AA fellowship (Tonigan et al., 1996). The scale consists of 13 items, 8 of which are scored dichotomously. The instrument is characterized by high internal consistency (0.85) and excellent 2-day test-retest reliability. Participants were considered to be helping other alcoholics if they endorsed the item: “Have you been an AA sponsor in the last 90 days?” or endorsed having completed Step 12 in answer to the question: “In the last 90 days, what AA steps did you complete?” Step 12 was defined as “Having had a spiritual awakening as the result of these steps, we tried to carry this message to alcoholics, and to practice these principles in all our affairs.” If participants did not endorse either of these items, they were considered to be not involved in helping other alcoholics. AAI data collected at intake and the 3-month follow-up assessment were used in the current study.

**Number of AA meetings attended**—The total number of AA meetings attended was assessed from the one item on the AAI that asks: “How many AA meetings have you attended in the last 90 days?” For descriptive purposes, the number of AA meetings attended

was divided into five categories: no meetings (reporting 0 meetings attended), attending a 1-22 meetings, attending 23-45 meetings, attending 46-90 meetings and attending 91 or more meetings.

### Statistical analysis

Statistical analyses were conducted using SAS version 8.0 (SAS Institute Inc., Cary, NC, 1999), using PROC FREQ, PROC CORR, PROC ANOVA and PROC LIFETEST. Depending on the type of variables (continuous or discrete), analysis of variance (ANOVA) or chi-square analyses were performed to evaluate demographic and clinical differences between groups. In interpreting for correlational analyses, Cohen (1988) considers  $r = 0.10$  “small”,  $r = 0.30$  “medium” and  $r = 0.50$  “large.” Kaplan-Meier survival estimates were used to calculate probabilities of time to alcohol relapse. To identify the unique value of helping other alcoholics when controlling for the total number of AA meetings attended, proportional hazards regressions were conducted to determine whether the likelihood of relapse was lower for those who were helping other alcoholics.

## Results

### Sample demographic and baseline clinical characteristics

A total of 1,501 (87%) participants of the initial Project MATCH sample of 1,726 participants had complete AAI data at baseline and the 3-month follow-up assessment. Demographic and clinical characteristics of the study sample are described in Table 1. There were no significant differences in the demographic characteristics of age, race, marital status, employment status and education, and in the number of drinks per drinking day, between the study sample ( $n = 1,501$ ) and those in the full sample who did not have AAI data at baseline and the 3-month follow-up ( $n = 225$ ). The majority of study participants were male (76%) and non-Hispanic whites (83%); 65% of the participants were married, and 51% were employed full-time. Participants had an average (SD) age of 40.2 (11.0) years and educational level of 13.3 (2.1) years. The sample was approximately evenly split between those in the aftercare arm ( $n = 671$ ; 45%) and those in the outpatient arm ( $n = 830$ ; 55%) (not shown in table). Participants consumed an average of 16.5 (10.5) drinks per drinking day. At intake, 10% of participants reported a prior history of helping other alcoholics. The sample median of the total number of AA meetings attended during the 3 months of treatment was 10.0. Of the participants, 474 (32%) reported attending no AA meetings, 457 (30%) attended 1-22 AA meetings, 215 (14%) attended 23-45 AA meetings, 226 (15%) attended 46-90 AA meetings, and 129 (9%) reported attending more than 90 AA meetings.

### Characteristics of alcoholics by status of helping other alcoholics

At the 3-month follow-up interview, which represents the end of the treatment period of the study, 120 participants (8%) reported they were helping other alcoholics through endorsement of Step 12 or being a sponsor. Of alcoholics who were helping other alcoholics, 23% were sponsors ( $n = 27$ ), and 82% endorsed completion of Step 12 ( $n = 99$ ). Approximately one of four participants who were sponsoring other alcoholics also endorsed completion of Step 12 ( $\chi^2 = 11.2$ , 3 df,  $p < .001$ ). A history of helping other alcoholics prior to treatment was significantly related to doing so at the end of treatment ( $\chi^2 = 8.9$ , 3 df,  $p < .0001$ ), although approximately two thirds of current participants who were helping others (76/120) did not have a prior history of helping other alcoholics. As shown in Table 1, there were no significant demographic differences by helping status in regard to gender, ethnicity, marital status, employment status, education and intake severity of drinking consumption. Regarding age, the mean age of participants who were helping other alcoholics was significantly higher than the age of those who were not helping others, although differences were not large (42.9 vs 40.0;  $F = 8.1$ , 1/1,499 df,  $p < .01$ ). The correlation between status of

helping other alcoholics and the total number of AA meetings attended was significant but only moderate in magnitude ( $r = 0.27, p < .0001$ ). As shown in Table 1, there were significantly lower rates of participants helping others in the MET treatment group (5%) in comparison with the CB or TSF treatments groups (9%;  $\chi^2 = 6.96, 2 \text{ df}, p = .03$ ).

### Probabilities of relapse by status of helping other alcoholics

Figure 1 shows survival curves representing the proportion of participants who avoided taking a drink as a function of time from the end of active treatment, which is Day 90 in the study. The time axis of Figure 1 thus represents the number of days after Day 90. Approximately 75% of the study sample experienced a relapse in the 12 months following treatment, a rate that was significantly lower in the aftercare arm (66%) than in the outpatient arm (82%; Wilcoxon  $\chi^2 = 78.5, 1 \text{ df}, p < .0001$ ). These rates are similar to those found in the original sample ( $N = 1,726$ ).

Comparing the survival curves between those who were helping other alcoholics and those who were not shows that relapse rates are highest in both groups immediately after treatment as indicated by the steep drop in the survival curves. As time progresses, the rate of new relapses decreases, and the curves tend to flatten. Using Kaplan-Meier survival estimates, participants who were helping other alcoholics at the end of the treatment period were significantly less likely to relapse in the 12 months following treatment than were those who were not helping others (Wilcoxon  $\chi^2 = 16.9, 1 \text{ df}, p < .0001$ ). Among those who were helping other alcoholics, 40% of participants avoided taking a drink in the year after treatment, whereas, among those who were not helping other alcoholics, only 22% avoided taking a drink. Differences in relapse rates between those helping other alcoholics and those not helping others were found in both study arms, although findings were more pronounced in the aftercare arm (Wilcoxon  $\chi^2 = 8.6, 1 \text{ df}, p = .003$ ) than in the outpatient arm (Wilcoxon  $\chi^2 = 4.7, 1 \text{ df}, p = .03$ ).

### Helping other alcoholics and AA attendance as predictors of relapse

To evaluate the unique contribution of helping other alcoholics when controlling for the number of AA meetings attended, proportional hazard regressions were conducted with both assessments as predictor variables, with the study arm, group status, included as a covariate. As shown in Table 2, the hazard of relapse for those who were helping other alcoholics was significantly less than for those who were not (risk ratio [RR] = 0.73), controlling for the total number of AA meetings attended and study arm (Wald  $\chi^2 = 74.3, 3 \text{ df}, p = .009$ ). This effect remained significant when the treatment condition of participants was also included in analyses. The results were similar among participants in the aftercare arm (RR = 0.71; Wald  $\chi^2 = 6.7, 2 \text{ df}, p = .037$ ) but were less so in the outpatient arm (RR = 0.76; Wald  $\chi^2 = 2.7, 2 \text{ df}, p = .126$ ). Using recommended procedures for comparing nested models (Singer and Willet, 2003), no significant difference was found between the -2LL statistics of the aftercare arm and outpatient arm models.

### Discussion

The next generation of AA researchers has been urged to explore the mechanisms in AA that help motivate and sustain behavior change (Allen, 2000). An activity that is strongly encouraged in AA is service work as a means of assisting both the person providing help and the person being helped to progress in recovery and refrain from returning to drinking behavior. The results of this study showed that participants who were either sponsoring others and/or worked Step 12 during the treatment phase of the study were significantly more successful at avoiding taking a drink in the year posttreatment than those who were not

helping other alcoholics. This result was present even when controlling for the number of AA meetings attended.

Our results are consistent with the few studies of problem use of alcohol or illicit drugs that show helping others is related to positive outcomes in substance use patterns (Crape et al., 2002; Krause, 1986; Krause et al., 1992; Silverstein et al., 1996; Zemore and Kaskutas, 2003). Our findings also parallel studies of older adults and individuals with severe mental illness that show an association between providing support to others and improved psychosocial functioning and psychological well-being (Krause, 1986; Krause et al., 1992; Roberts et al., 1999; Silverstein et al., 1996; Walker et al., 1992). These effects may be due, in part, to the likelihood that providing support yields a sense of purpose, development of trust, a shift of focus from self to others, greater treatment involvement and increased motivation for lifestyle change (Chappel, 1994; Crape et al., 2002; Kessler et al., 1985; Krause et al., 1992; Silverstein et al., 1996).

Our results also suggest that being able to help other alcoholics is not limited to individuals of a certain educational level, gender, race, socioeconomic class or severity of drinking behavior. Participants helping other alcoholics were significantly more likely to be older than those who were not involved in helping others, although the magnitude of this difference was only 3 years on average. Alcoholics who help other alcoholics may provide particularly important accessibility to those in temporary living situations, such as half-way houses, rehabilitation environments and short-term lease apartments, and to the homeless, who are less likely to benefit from other cost-effective treatment modalities, such as case monitoring, that rely on being able to contact the alcoholic (Zweben et al., 2003). The clinical implications of these findings suggest that professionals treating alcoholics might encourage their clients to engage in activities that help other alcoholics in recovery to stay sober. Although research is lacking to determine at what point clients are ready to help other alcoholics, our results suggest there are benefits to helping other alcoholics in the first 3 months after starting treatment. Our findings support the AA literature that encourages newcomers in recovery to help other alcoholics (i.e., “Even the newest of newcomers finds undreamed rewards as he tries to help his brother alcoholic, the one who is even blinder than he” [AA, 1981, p. 109]).

There are several limitations of this study that should be noted. First, the rate of helping other alcoholics was low (8%). The rate would probably be higher if measured with a more refined tool that assessed the degree to which a participant was helping other alcoholics.

At the end of the treatment period, participants may not have viewed themselves as far enough along in their recovery to claim the title of being a sponsor. AA philosophy, however, encourages alcoholics to get active immediately in service opportunities within the program, regardless of length of sobriety, but many alcoholics providing guidance and assistance to other alcoholics may not have established themselves as a sponsor to those they are helping. Another measurement issue has to do with interpretation of Step 12. Participants may have had the understanding that the completion of all AA steps in sequential order was necessary to be able to endorse Step 12. Helping other alcoholics is an essential component of this step, but it also entails “practicing these principles in all our affairs” and “having had a spiritual awakening.” Participants may have understood that all three components of this step needed to be completed to respond positively to this item. Thus, although it is likely those who considered themselves as having completed Step 12 were helping other alcoholics, the effects of the two other components are also included in our results. Work is currently in progress to develop a measure that will capture monthly rates not only of being a sponsor and helping other alcoholics but also levels of participation in other concrete service activities related to helping alcoholics, as well as individuals in the family, social

networks, community and work environments. Second, Longabaugh (2003) and Longabaugh et al. (1993) found that the impact of the social environment on alcohol use outcomes may vary according to the importance of the environment to a given individual, and we did not measure this element. Third, our study was not designed to determine which elements of AA involvement are the most important contributors to abstinence. Many elements of AA participation are not discrete events that lend themselves to looking at behavior change after the events occur. Many of the steps, for example, may be interpreted as work in progress rather than completed achievements. For many, completing a fourth step can take many months or even years, and several of the steps may be viewed as daily practice rather than step completion. Such elements are also likely to contribute tremendously to gradual alteration of behavior. Future studies are needed to determine at what point behavioral change may be detected following particular steps that lend themselves to completion.

Despite these limitations, this study is the first longitudinal investigation of the effects of helping other alcoholics on drinking outcomes to use prospectively collected data with a large sample size. Our results add to a growing consensus in the literature on illicit substance use and other use disorders that giving help to others benefits the giver, with an impact distinct from the sheer number of AA meetings attended. More generally, our results add to the growing number of empirical studies advancing the understanding of how AA helps initiate and sustain behavior change.

Future studies in this area should attempt to identify, quantify and explore more specifically the different activities involved in helping others and the intensity of these activities to better understand what aspects of helping others are most linked to better drinking outcomes. Helping other alcoholics may have many important benefits, such as providing a sense of purpose and contribution, giving a sense of comfort in shared experiences, reinforcing the rewards of staying sober and offering the opportunity to gain a new perspective of past regrets (Condelli and De Leon, 1993; Crape et al., 2002). Having an AA service position, whether it be calling another alcoholic on a regular basis, making coffee at a meeting or serving as treasurer for a group, may yield higher treatment involvement because it requires the client to do a great deal of the “leg work” in acquiring needed resources and helps maintain periodic AA connections (Stout et al., 1999). These potential benefits of helping other alcoholics warrant additional examination. Tonigan et al. (1996b) found that greater severity of alcohol dependence and alcohol-related problems was strongly predictive of twelfth-step participation. This suggests that helping others, as another important form of twelfth-step participation, may be more effective for those with more severe drinking histories, but this hypothesis warrants future investigation. Also warranted is research to measure the myriad ways in which service in AA can be performed and to determine other elements of AA participation that might be associated with increased likelihood of staying sober, of shorter durations of drinking episodes and of positive alcohol outcomes several years following treatment.

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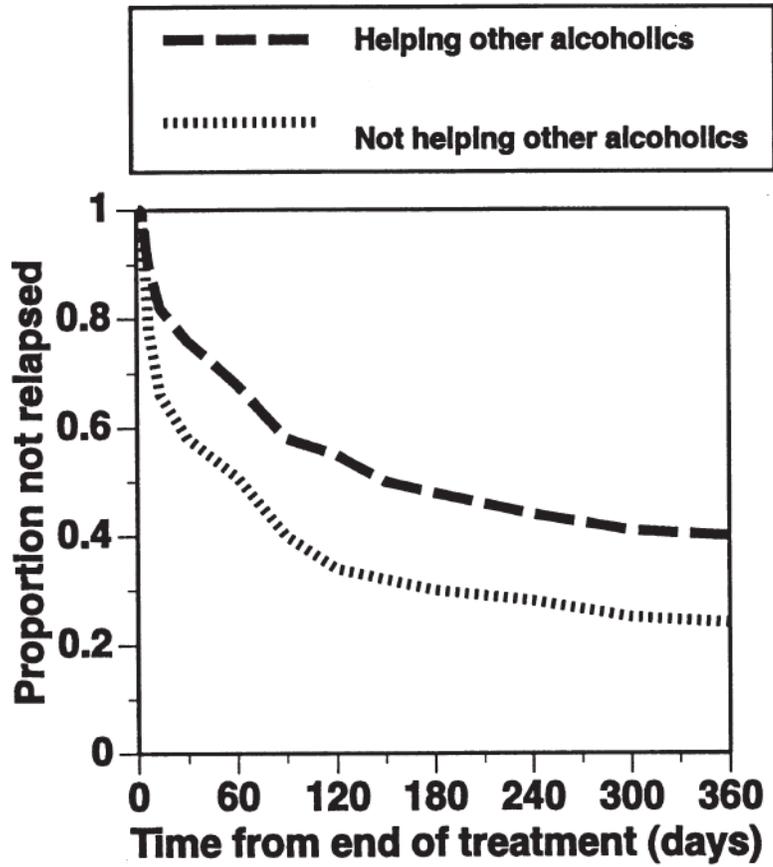
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**Figure 1.** Relapse status for alcoholics following treatment by status of helping other alcoholics

**Table 1**

Demographic characteristics of study sample by status of helping other alcoholics

	Total sample	Not helping other alcoholics	Helping other alcoholics
Demographic characteristics	1,501 (100%)	1,381 (92%)	120 (8%)
Male	1,141 (76%)	1,045 (92%)	96 (8%)
Race			
White	1,241 (83%)	1,144 (92%)	97 (8%)
Black	139 (9%)	127 (91%)	12 (9%)
Other	121 (8%)	110 (91%)	11 (9%)
Marital status			
Single	518 (35%)	479 (92%)	39 (8%)
Married	983 (65%)	902 (92%)	81 (8%)
Employed full-time	761 (51%)	697 (92%)	64 (8%)
Age, mean (SD)	40.2 (11.0)	40.0 (10.9)	42.9 (11.4) <sup>†</sup>
Education, mean (SD)	13.3 (2.1)	13.3 (2.1)	13.6 (2.1)
Drinks per drinking day, mean (SD)	16.5 (10.5)	16.4 (10.6)	17.1 (9.9)
History of helping other alcoholics	157 (10%)	113 (72%)	44 (28%) <sup>‡</sup>
Treatment group			
CB	490 (33%)	445 (91%)	45 (9%)
MET	501 (34%)	474 (95%)	27 (5%)*
TSF	510 (34%)	462 (91%)	48 (9%)

Notes: CB = Cognitive-Behavioral Therapy; MET = Motivational Enhancement Therapy; TSF = Twelve Step Facilitation.

\*  $p < .05$ ;

<sup>†</sup>  $p < .01$ ;

<sup>‡</sup>  $p < .0001$ .

**Table 2**

Helping other alcoholics and AA attendance following treatment as predictors of relapse

	<u>Total sample (N = 1,501)</u>		<u>Aftercare arm (n = 671)</u>		<u>Outpatient arm (n = 830)</u>	
	<b>RR</b>	<b>p</b>	<b>RR</b>	<b>p</b>	<b>RR</b>	<b>p</b>
Helping other alcoholics	0.73	.009	0.71	.037	0.76	.126
Number of AA meetings attended	1.00	.911	1.00	.272	1.00	.316

*Note:* RR = risk ratio.