

Alcoholics Anonymous: Who Benefits?

J. SCOTT TONIGAN, PH.D.,
AND SUSANNE HILLER-
STURMHÖFEL, PH.D.

Alcoholics Anonymous (AA) is the most popular self-help organization for individuals with alcohol-related problems. This includes both alcohol-dependent and, to a lesser extent, alcohol-abusing drinkers. For many people, self-help through AA is the only alcoholism treatment they receive. Other members join the fellowship before entering professional treatment or are introduced to AA as a component of their professional treatment. Attendance at AA also commonly is recommended as after-care following professional treatment. Yet experience shows that not all clients benefit from AA to the same extent. Therefore, two questions arise: Who does well in AA, and why do these people succeed?

These questions do not have simple answers, however, because outcome (i.e., reduction of drinking or improvement of psychological and social characteristics) associated with AA, as with any kind of alcoholism treatment, is influenced by many characteristics of the clients and the AA groups. For example, the success of AA participation depends not only on an individual's initial decision to attend AA but also on the degree of his or her involvement in AA (e.g., frequency of attendance at meetings, "sharing" at meetings, or serving as or having an AA sponsor). Even similar levels of AA involvement may result in different outcomes for different people, depending on

the individual's characteristics and experiences with professional treatment.

Despite four decades of AA research, no clear picture has emerged as to which patient characteristics can predict a positive outcome with AA and, therefore, can be used as criteria for matching patients to AA. This is due in part to the limitations and variability of methodological approaches used in the studies. Most investigators recruit their samples from patients in inpatient or outpatient treatment settings. Some studies retrospectively analyze patients with previous AA experience to identify personal characteristics that predicted AA involvement. In other studies, patients are monitored after professional treatment to determine which characteristics may motivate them to join AA and how AA affiliation influences outcome. In both approaches, the kind and impact of the professional treatment often is ignored. Other confounding factors in research about AA include an incomplete understanding of processes within AA and differences among various AA groups.

To date, only three randomized clinical trials have examined the efficacy of AA participation, either with or without additional simultaneous treatment approaches (Ditman et al. 1967; Brandsma et al. 1980; Walsh et al. 1991). The vast majority of AA studies, however, have focused on two narrower questions: Which factors predict whether a person will join AA? And how does involvement in AA predict outcome? In an attempt to answer these two questions, Emrick and colleagues (1993) reviewed 107 previously published AA studies. Although their analysis provided estimates of the magnitude of the relationships determining AA affiliation and drinking outcome, it also acknowledged that many relationships may differ when study findings are grouped by client characteristics. Tonigan and colleagues (1994) extended the initial analyses by taking into account factors such as sample gender and origin (i.e., inpatient versus outpatient). This article integrates the findings of these two reviews and concludes with recommendations for future research of AA.

WHO JOINS AA?

To determine which drinkers were most likely to join AA, Emrick and colleagues (1993) reviewed 33 studies¹ that addressed this question, analyzing 31 demographic and drinking-related client characteristics.

The characteristic most strongly correlated with joining AA was the drinkers' previous use of external support mechanisms to stop drinking. The drinkers' demographic characteristics, such as gender, age, and education, were not related to whether or not they joined AA. Factors related to alcohol consumption, such as quantity consumed daily, obsessive preoccupation with alcohol, severity of physical dependence, and loss of control while drinking, however, had some correlational value. For example, drinkers who had higher levels of alcohol consumption had a greater likelihood of attending AA.

Tonigan and colleagues (1994) analyzed whether sample origin (i.e., sample recruitment from outpatient or inpatient settings) affected the correlation between consumption-related factors and AA affiliation. The study found that although the overall rate of AA affiliation was comparable for outpatient and inpatient samples, affiliation was modestly correlated to consumption-related factors only in outpatient samples—no such correlation existed in inpatient samples. One explanation for this difference could be that, in general, there was much greater variation in these factors (e.g., alcohol consumption levels of the patients) among inpatient samples than among outpatient samples. Such variation could attenuate the relationship between consumption-related factors and AA affiliation.

DOES AA INVOLVEMENT REDUCE DRINKING?

Without taking into consideration patients' professional treatment experiences, Emrick and colleagues (1993) reviewed 16 studies¹ to determine whether the extent of AA involvement predicted treatment outcome. Most of the studies found that greater AA involvement could modestly predict reduced alcohol consumption.

When Tonigan and colleagues (1994) examined the influence of gender on this correlation, they found that the relationship between AA involvement and abstinence was stronger in studies that analyzed only men than in studies that included men and women. This finding indicates that men and women may respond differently to AA and that AA involvement may be less beneficial to women. One potential explanation is that women may require

¹The complete list of references for these studies is available from the first author.

J. SCOTT TONIGAN, PH.D., is deputy director of the Research Division at the Center on Alcoholism, Substance Abuse, and Addictions; University of New Mexico; Albuquerque, New Mexico.

SUSANNE HILLER-STURMHÖFEL, PH.D., is an associate editor of Alcohol Health & Research World.

different treatment settings than men for optimal treatment outcome (Beckman 1994). Some studies indicate that women may prefer more one-on-one treatment (Jarvis 1992) and, consequently, may benefit less from the group-oriented AA setting. Alternatively, AA involvement may be less beneficial for women because co-occurring disorders that are more prevalent among women, such as depression, often are not addressed explicitly in AA programs. This theory is supported by studies¹ that analyzed alcohol consumption and AA attendance in clients who already had completed professional treatment, during which any co-existing psychiatric disorders presumably would have been addressed. Therefore, the women would not have to rely on AA to serve as their sole source of treatment for both alcohol-related and psychiatric problems. These studies found only small differences between men's and women's outcome as a result of AA involvement.

Other studies¹ analyzed the relationship between AA involvement and improved psychosocial functioning. These studies used measures such as marital satisfaction; employment status; or scores on the Minnesota Multiphasic Personality Inventory, a questionnaire used to measure psychological functioning. Tonigan and colleagues (1994) found modest positive relationships between AA attendance and improvement of these measures. However, psychosocial improvement was not the same for all client populations. For example, among clients who received no professional treatment, men appeared to improve more than women. Among clients receiving professional treatment in addition to participating in AA, those in outpatient programs reported greater psychological improvement as a result of AA attendance than did those in inpatient programs.

RECOMMENDATIONS FOR FUTURE AA RESEARCH

Although the analysis of AA studies suggests some patient characteristics that influence affiliation with AA or drinking and psychological outcome, the existing research still has severe methodological flaws, as was mentioned earlier. For example, the patient samples used in many studies do not represent adequately the general AA member population, and demographic patient characteristics often are not described thoroughly. Also, the

instruments used to measure drinking, AA affiliation and involvement, and outcome often rely on patients' self-reporting, a method that inherently involves variability and may lack reliability. A plethora of innovative research approaches and questions have been suggested to strengthen AA research (McCrary and Miller 1993), such as those discussed below.

First, patient samples in AA studies should represent AA member composition more accurately. In particular, the underrepresentation of adolescents and women in AA research must be corrected. To be more informative, studies also should report routinely patient characteristics, such as age, gender, marital and employment status, and severity of drinking problems.

Second, followup protocols for AA studies should be extended. With some exceptions (e.g., Sheeren 1988; Vaillant 1983), AA studies have not conducted long-term followup. In the studies reviewed by Emrick and colleagues (1993), the average assessment time after affiliation with AA was 18 weeks. Given the lifelong commitment expected of AA members, it is doubtful whether such a short period is sufficient to detect meaningful changes.

Third, factors promoting AA involvement must be better identified and understood. Evidence suggests that the extent of involvement in AA, rather than the frequency of attendance, predicts how individuals fare in AA (e.g., Snow et al. 1994). However, there still is no consensus on how to assess involvement and even less consensus on the factors that influence whether, and how much, a person becomes involved. Health care professionals and researchers, because of their clinical experience and contact with AA members, could be valuable resources for developing reliable instruments to measure involvement.

Fourth, future research should pay more attention to patient-treatment matching approaches and examine how different types of professional alcoholism treatment and different patient characteristics relate to AA involvement and drinking behavior. For example, existing evidence suggests that women do better in AA after having had prior professional treatment, rather than without having had such treatment, and that AA members who receive outpatient treatment fare better than those who receive inpatient treatment.

A patient-treatment matching approach also could include comparisons of the philosophies behind different

professional treatment approaches and AA. Philosophical similarity between a specific program and AA may increase a patient's acceptance of AA principles, thus improving the patient's involvement and, consequently, outcome with AA. Conversely, philosophical differences could negatively affect a patient's involvement and outcome with AA.

When matching clients to AA, differences between individual AA groups also may need to be considered. AA is not a single entity. A study by Montgomery and colleagues (1993) found that AA groups vary in their social structure and their characteristics, such as perceived cohesiveness, aggressiveness, and expressiveness. Some clients may be more attracted and responsive to specific group characteristics than others. Consequently, it may not be realistic to expect to find general predictors of affiliation and outcome with AA. ■

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Liver Transplantation and Alcoholism Rehabilitation

THOMAS BERESFORD, M.D.

In the excitement of finding a remarkably high rate of first-year abstinence among his alcoholic liver transplant patients (Starzl et al. 1988), Dr. Thomas Starzl, the pioneer of transplant surgery in this country, commented to the press that liver transplantation might be the ultimate cure for alcoholism.¹ His study of transplanted alcoholic patients was published with little comment on meth-

ods of patient selection or of posttransplant care. Five years later Starzl and colleagues presented data that argued the opposite case—that those with alcoholic hepatitis and cirrhosis show remarkably high rates of relapse to uncontrolled drinking despite having undergone liver transplantation (see Bonet et al. 1993). How can one find a rational approach between these two extremes? The best answer is a complex one, requiring a careful understanding of the methods of preoperative patient selection and of postoperative care. This article offers a brief overview of the topic; for more detail, see Lucey et al. 1994.

Table 1 lists the data from four liver transplant programs. These programs have reported 1-year abstinence rates among liver transplant recipients who also suffered from preexisting alcohol addiction. All programs reported first-year abstinence rates that approximated 90 percent, a remarkably high frequency when compared with the 30- to 50-percent range reported in alcoholism treatment studies that did not involve a procedure as drastic as liver transplantation (Moos 1990; Vaillant 1983). On the surface, it is easy to conclude that a chronic life-threatening illness, followed by the extreme stress of a lengthy operation and its ensuing recovery, might deter a patient from future drinking. There is the added implication that the patient will not receive another transplant if drinking begins again and results in a second liver failure.

A closer look at the programs reveals several common threads. Each program carefully selects and then follows those alcohol-dependent patients for whom the program will agree to provide a liver transplantation. Selection is based in part on the perceived risk that a particular patient will return to uncontrolled alcohol use. The University of Michigan’s liver transplant program has led in the development of selection procedures for alcoholic transplant candidates (Beresford et al. 1990), and each of the other programs incorporates some aspects of these procedures in their own formulations. However, the questions arise: Are there empirical guidelines for predicting long-term remission from alcohol dependence? In particular, does the

transplant itself have a positive effect on maintaining abstinence? Currently, there are only partial answers to these questions, which are discussed below.

PREDICTING ABSTINENCE

Research has shown the following characteristics among patients who are likely to maintain long-term abstinence: (1) self-recognition of alcohol dependence and acceptance of it as a condition to be dealt with, (2) a socially stable living environment, (3) freedom from severe psychiatric disorders, and (4) available resources that facilitate continued abstinence (Beresford 1990; Lucey et al. 1994).

Vaillant’s work (1983) is especially pertinent. In an 8-year prospective² study, he noted that alcoholics who had been abstinent for 3 years or longer had at least two of four clinical indicators. First, they structured their time with substitute activities that limited the potential time they could spend drinking. Second, they had developed a relationship with a person committed to their well-being who put clear limits on his or her toleration of their drinking. Third, they found a sense of hope or of improved self-esteem in some aspect of their lives that counteracted the often intense guilt they felt as a result of their pathological alcohol use. Fourth, they suffered some noxious consequence of drinking, such as severe abdominal pain from pancreatic inflammation or an ethanol-disulfiram reaction³ (see the article by Anton, pp. 265–271).

As most liver transplant programs now realize, alcoholic candidates who recognize their alcohol dependence as a serious and continuing health risk, who have a socially stable environment, and who possess most or all of the factors described by Vaillant are unlikely to relapse to alcoholic drinking during the first 12 months after a liver transplant. However, it is not certain whether these factors are the actual cause of relapse prevention in these patients.

For most liver transplant recipients, all the predictive factors that Vaillant elucidated occur in the natural course of postoperative care during the first year (Beresford et al. 1992). For example, the thought of death as a direct and negatively per-

²A prospective study tracks a group of subjects for a period of time following initiation of the study.

³Disulfiram (Antabuse®) is a medication prescribed to discourage drinking by producing unpleasant symptoms in combination with alcohol.

¹Throughout this article, terms such as “alcohol addiction,” “alcoholism,” and “problem drinking” are used. These terms overlap in alcoholism literature; therefore, the wording in each case is based on the terms used in the reference cited.

THOMAS BERESFORD, M.D., is a professor of psychiatry at the University of Colorado School of Medicine, Veterans Affairs Alcohol Research Center, University of Colorado Alcohol Research Center, Denver, Colorado.

Table 1 Data on Alcoholic Liver Transplant Recipients From Four Medical Centers

Patient Information	Liver Transplant Centers			
	Baylor ¹	Pacific ²	Michigan ³	UCSF ⁴
Number	50	29	39	35
Median Age (years)	49	47	44	47
Gender				
Male (%)	75	64	64	70
Female (%)	25	36	36	30
1-Year Survival (%)	89	94	78	100
1-Year Abstinence (%)	87	83	93	92

¹Baylor University Medical Center, Dallas, TX (Tripp et al. 1992).

²Pacific Medical Center, San Francisco, CA (Gish et al. 1993).

³University of Michigan Medical Center, Ann Arbor, MI (Lucey et al. 1992).

⁴University of California at San Francisco Medical Center, San Francisco, CA (Osorio et al. 1994).

ceived consequence of drinking may reinforce abstinence, at least in the months immediately following the transplant procedure. For most patients, the care of the new liver requires a nearly ritualized ingestion of anti-immune medicines twice daily; along with postsurgery rehabilitation, this becomes a substitute activity that structures time and serves to replace drinking as a primary concern in life. Continued contact with the transplant team postoperatively offers a rehabilitation relationship that bolsters the patient's self-esteem and reinforces the necessity of abstaining from alcohol. Finally, liver transplantation offers a profound sense of hope in providing a second chance at life for an alcoholic whose fate otherwise is certain death. This too results in an improved sense of self-worth for most alcoholic recipients. It is therefore not surprising that most properly selected alcohol-dependent liver transplant recipients remain abstinent without exposure to formal alcoholism rehabilitation programs either before or after the operation.

LONG-TERM ABSTINENCE

All the patient characteristics described by Vaillant (1983) as favorable to abstinence may be fostered naturally as the transplant team assists the patient in the physical recovery process. However, the frequency and intensity of each patient's contact with the team can be expected to decrease during the course of recovery from the operation. Discussed below is the course of postoperative adjustment among alcoholics beyond the first year and its implications for sustained abstinence.

The Michigan group (Campbell et al. 1993) provided a brief report on a series of 52 alcohol-dependent patients who had undergone liver transplantation. All subjects were rigorously selected and were considered to be at low risk for alcoholism relapse after surgery. Contrary to the practice at some other programs, however, no fixed period of preoperative sobriety was required. Thirteen patients who died within 6 months from causes not related to alcohol use were excluded from analysis, along with one patient whose preoperative evaluation was not available. The final study group included 38 patients, who were followed for 36 months on average. Statistical analysis determined the likelihood of posttransplant total abstinence to be 92 percent after 1 year and 74 percent after both 2 and 3 years.

During the 3-year term, the majority (69 percent) of subjects remained completely abstinent, whereas an additional minority (18 percent) experienced brief drinking relapses. The latter group represented seven patients who reported limited alcohol consumption for brief periods that did not result in injury, medical complication, or a return to uncontrolled alcohol use. The overall lack of alcoholic relapse and injury in these two groups seemed to be due, in part, to attentive long-term followup care.

A small minority (13 percent) of the subjects returned to uncontrolled drinking over the 3-year period. This group included a total of five liver transplant recipients who had suffered severe alcoholic relapses requiring medical hospitalization; one of them died from transplant rejection because of poor compliance with the anti-immune medicines while drinking.

This number of seriously relapsing alcoholics was too small to determine whether relapse could be predicted by pretransplant factors, such as length of sobriety before the initial evaluation. The problem of insufficient numbers of subjects also has hampered other attempts to evaluate the predictive value of such factors (Osorio et al. 1994). Nevertheless, the low rates of severe alcoholism relapse even after 3 years is noteworthy. It argues for continued allocation of liver transplants to carefully selected alcohol-dependent candidates and indicates the need to improve predictive and followup methods.

Both 1- and 3-year relapse rates among alcohol-dependent liver transplant recipients appear to be significantly lower than those reported among nonselected patients attending alcoholism rehabilitation programs. The best 1-year rates of abstinence among the latter reported in the literature are in the range of 50 percent (Vaillant 1983; Moos et al. 1990), less than the 3-year rate noted above among the transplant patients. This difference may be explained by the combination of three elements: patient selection, the transplant experience, and factors that support long-term abstinence. The long-term data from transplant recipients have not been replicated, however, and consist only of a small sample surveyed through followup contacts rather than systematically tracked over time. A larger series of alcohol-dependent liver transplant recipients who have been carefully selected, evaluated, and followed through time is needed to establish high rates of posttransplant abstinence as a firm empirical observation and to begin to determine the reasons for it.

Of the 3,000 liver transplants performed annually in this country, only a minority involve alcohol-dependent patients (Lucey et al. 1994). The number of alcohol-dependent persons in the Nation at any time is estimated to be in the several millions. The following findings can be learned from this small, unique patient group and can be generalized to treating the larger population of problem-drinking Americans:

- Providing drastic or painful medical procedures alone, such as disulfiram treatment, probably will not result in sustained abstinence from alcohol.
- Continuous, active care aimed at providing or nurturing the good outcome factors described by Vaillant probably will result in higher than

expected abstinence rates if that care can be integrated into a program of ongoing medical surveillance.

- Patients who demonstrate favorable outcome prediction profiles may require little in the way of formal alcoholism rehabilitation treatment.
- Persons suffering from alcohol dependence whose outcome prediction profiles match those factors associated with sustained abstinence are probably good-risk patients for costly and extraordinary medical procedures of any type.

In the current era of health care reform and reduced spending, some people will argue that alcoholics, by virtue of their alleged vice, do not deserve liver or heart transplantations or other such costly procedures. Actual transplant data argue to the contrary and support the case for regarding alcoholism as resembling any other illness in that it is amenable to diagnosis, predictive assessment, and understanding through the methods of careful clinical science. ■

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