

Social and Community Resources and Long-Term Recovery from Treated and Untreated Alcoholism*

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ABSTRACT. *Objective:* Long-term studies of the course of alcoholism suggest that a variety of factors other than professional treatment influence the process of recovery. This study evaluated the role of demographic factors, baseline alcohol-related problems and depression, professional treatment, Alcoholics Anonymous (AA) and other social and community resources in predicting remission and psychosocial outcome over 8 years. *Method:* A sample of 628 previously untreated alcoholic individuals was recruited at detoxification units and alcoholism information and referral services. Of these participants, 395 (68.2%) were followed 3 and 8 years later. Most (83.3%) were white ($n = 329$) and 50.1% ($n = 198$) were men. At each contact point, participants completed a self-administered inventory that assessed their current problems, treatment utilization, AA participation and quality of relationships. *Results:* Number of inpatient treatment days received in

the 3 years after baseline were not independently related to 8-year remission or psychosocial outcomes. More outpatient treatment in the first 3 years increased the likelihood of 8-year remission, but was not related to psychosocial outcomes. The number of AA meetings attended in the first 3 years predicted remission, lower depression, and higher quality relationships with friends and spouse/partner at 8 years. Extended family quality at baseline also predicted remission and higher quality friendships and family relationships at 8 years. *Conclusions:* Given that alcoholism is a chronic, context-dependent disorder, it is not surprising that short-term interventions have little long-term impact. Social and community resources that are readily available for long periods are more likely to have a lasting influence on the course of alcoholism. (*J. Stud. Alcohol* 58: 231-238, 1997)

MOST studies of recovery from alcoholism are primarily intended to assess the effectiveness of treatment, as typically determined by outcome data gathered within a year or two of discharge. Although studies of the short-term effectiveness of alcoholism treatment address a critical health policy issue, they may overstate long-term remission and recovery rates because a significant proportion of alcoholic patients do not maintain gains achieved in the year following discharge (Nathan and Skinstad, 1987; Thurstin et al., 1987). Further, just as alcoholism typically takes years to develop, it often takes years and multiple efforts at recovery—only some of which may involve treatment—to be resolved (Vailant and Milofsky, 1982).

These observations have led some researchers to supplement traditional short-term “treatment-centered” studies of

recovery with long-term naturalistic studies that evaluate the impact of treatment in the context of many other influences, such as alcoholic individuals’ economic and employment situation, involvement in self-help groups and religious organizations, and relationships with family, friends and spouse (Edwards, 1989; Moos et al., 1990). In this article, we briefly review the knowledge base generated by long-term studies that address a broad range of extratreatment influences on alcoholism, and then present an 8-year follow-up of alcoholic individuals.

What predicts the long-term course of alcoholism?

Demographic characteristics. In general, higher social class and social stability are predictive of increased likelihood of recovery from alcoholism, probably because they are associated with both premorbid competence and ongoing rewards, such as social approval and a steady income (Gerard et al., 1962; McCabe, 1986). In contrast, individuals who are unmarried, lack stable family situations and employment, and live in low-income communities, tend to experience poor long-term outcomes (e.g., Westermeyer and Peake, 1983). In the alcoholic sample we examine in this study, we found that financial stressors and alcohol-related problems reinforced each other over 1- and 3-year follow-ups (Humphreys et al., 1996).

Women have different social resources and drinking patterns than men, suggesting that they may experience a

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different long-term course of alcoholism (Gomberg, 1991). Ageing may also shape the course of alcohol problems, although results are mixed. General population surveys show that many heavy-drinking men reduce their alcohol use through their 20s and early 30s, but after this point increasing age has little or no relationship to subsequent drinking problems (Fillmore and Midanik, 1984). In regards to middle-aged alcoholic samples, Öjesjö (1981) found modest evidence that younger baseline age predicted remission over a 15-year interval, but McCabe (1986) found no such age effect in his 16-year follow-up study.

Baseline alcohol problems and depression. Some research indicates that individuals who have more severe drinking problems at baseline have worse long-term outcome (e.g., Öjesjö, 1981). Other work suggests that the course of alcoholism can be quite variable. For example, Rychtarik and colleagues (1987) found no relationship between baseline alcohol withdrawal symptoms and drinking behavior 5-6 years after treatment.

Higher levels of depression have been predictive of subsequent decreases in drinking problems in short- and medium-term studies (e.g., 1-4 years) of diverse samples, including treated alcoholic women (Rounsaville et al., 1987), late-life problem drinkers (Schutte et al., 1994) and the untreated portion of the sample we employ in this study (Humphreys et al., 1995). This may be because depression leads to help-seeking or other efforts at recovery. It is not clear whether this effect has long-term stability, however. A 10-year study of major depressive disorder pointed to a synergistic relationship between depression and alcohol abuse (Mueller et al., 1994).

Alcoholism treatment. Most long-term studies do not support the view that treatment has a lasting impact on the course of alcoholism. In a long-term follow-up of 113 alcoholic patients (Finney and Moos, 1992), the number of treatment experiences received in an index episode 10 years earlier did not predict drinking behavior or depression. Vaillant's research on 110 alcohol-abusing men also concluded that "specific clinical interventions seem to be relatively unimportant" (Vaillant and Milofsky, 1982, p. 129) in long-term recovery from alcoholism (see also Cross et al., 1990).

These negative findings on the long-term effectiveness of alcohol treatment make some intuitive sense. Alcoholism treatment emphasizes short-term intervention for acute problems and therefore may not make a lasting impact on the chronic, relapsing disorder it is intended to address. Further, the life context factors former patients experience in the years following discharge may amplify or negate any effects of treatment (Moos et al., 1990).

Social and community resources. Alcoholism is inextricably linked to an individual's social environment. Hence it is not surprising that studies of both treated and untreated alcoholic individuals show that their social contexts affect their likelihood of recovery. For example, being an active member of a religious organization is associated with lower alcohol consumption and decreased likelihood of be-

ing a heavy drinker (Gorsuch, 1993). Although the question has not been extensively examined, two long-term studies noted that increased involvement in religion was linked to remission in a subset of alcoholic individuals (Lemere, 1953; Vaillant and Milofsky, 1982). Further, Moos and colleagues (1990) found that greater moral/religious emphasis in the family environment of discharged alcoholic patients predicted lower alcohol consumption 8 years later.

Alcoholics Anonymous explicitly discourages drinking and offers a supportive social network of individuals who do not use alcohol. Several long-term studies (e.g., Thorpe and Perret, 1959; Vaillant and Milofsky, 1982) support AA's effectiveness. In a study of 158 alcoholic patients, Cross et al. (1990) analyzed the impact of pretreatment problem severity, demographic variables and posttreatment AA involvement on long-term sobriety assessed 10 years after inpatient treatment. AA involvement (e.g., going to meetings, sponsoring other members, having a home group) was the only variable that significantly predicted sobriety. Similarly, our research group found that AA participation predicted positive 3-year drinking and coping outcomes in the sample we employ here (Humphreys et al., 1994, 1996; Timko et al., 1995).

Quality of relationships with extended family, friends and spouse/partner may also influence the course of alcoholism. Rychtarik et al. (1987) found that a greater number of social supports available at intake predicted lower alcohol consumption 5-6 years later. Another study (Finney and Moos, 1991) reported that family conflict measured 6 months after treatment predicted higher alcohol consumption at 10-year follow-up. Other long-term outcome research has found that recovered problem drinkers often attribute their improvement to a need to attend to increased family responsibilities (Goodwin et al., 1971) or to a new love relationship (Vaillant, 1983). In the sample we employ here, extended family and friend support at baseline did not predict 1-year drinking outcome, but greater friend support at 1 year was related to fewer drinking problems at 3 years (Humphreys et al., 1996).

Finally, it is important to note why all the social and community resources just discussed may be robust predictors of long-term outcome: they tend to be available more readily and for more extended periods than are contacts with treatment professionals. Even though an outpatient treatment session may have more immediate impact than, for example, an AA meeting or a religious service, the wider availability and lower cost of these community resources may make sustained participation easier for alcoholic individuals.

The present study

The handful of studies reviewed are important because they expand our understanding of alcoholism beyond the 1- or 2-year window usually employed in treatment outcome

studies and show the broad range of variables that may contribute to recovery. However, a practical limitation to the long-term approach is that it is difficult to obtain samples large enough to yield robust tests of the effects of particular variables (e.g., treatment). Further, studies that rely on samples of patients that have been treated multiple times prior to study recruitment may understate the effectiveness of treatment and of AA.

In this study, a large number of alcoholic individuals was followed 8 years after initial contact. None of the participants had been treated prior to baseline. Timko and colleagues (1994, 1995) found that the amount of inpatient and outpatient treatment individuals in this sample received predicted better drinking-related outcomes at 1 and 3 years (2-3% of variance independently explained). Attending more Alcoholics Anonymous meetings also predicted better outcome at 1 and 3 years. Here, we examine whether these treatment and AA experiences in the first 3 years of the study conferred any long-term benefit, and also try to identify life context factors that predict long-term recovery from alcoholism. We also characterize the long-term prognosis of people with severe alcohol-related problems.

Method

Sample

The sample was drawn from an 8-year longitudinal study of 628 alcoholic individuals that has been described in detail elsewhere (Finney and Moos, 1995; Timko et al., 1993). Of the original sample, 468 participants were successfully followed-up 3 years after baseline, and 466 participants were successfully followed-up 8 years after baseline. This report is based on the 395 individuals followed at both of these time points. By the 8-year follow up, 49 of the initial 628 participants had died; hence the current sample of 395 individuals is 68.2% of the initial sample not known to have died.

Two follow-up attrition analyses were conducted. Individuals who were followed at both time points were compared to individuals who were not followed at 8 years. Followed individuals were not significantly different ($p > .05$) than those not followed on gender, race, age, drinking-related problems or depression at baseline. However, at baseline, located individuals had fewer alcohol dependence symptoms and were more likely to have been employed and married. The second attrition analysis focuses on the 71 individuals found at 8 years who were not in the current sample because they were not found at 3 years. The remission rate for these individuals was virtually identical to the rest of the sample. Independent samples t test on 8-year daily ethanol consumption, drinking-related problems and depression also showed no significant differences ($p > .05$) between those found at 3 and 8 years versus 8 years only. However, those found at 8 years only did have lower quality relationships at 8 years with friends ($p = .007$), part-

ner/spouse ($p = .077$) and extended family ($p = .014$). Thus, in the present study, follow-up attrition seems to have related more strongly to poorer psychosocial functioning than to more severe alcohol-related problems.

Most (83.3%, $n = 329$) participants were white and the sample was evenly divided by gender (50.1% male, $n = 198$). At baseline, average (\pm SD) years of education was 13.3 ± 2.2 and average age was 34.3 ± 9.3 years. No one in the sample had received formal treatment for alcohol problems prior to baseline. Almost all (95%, $n = 373$) participants experienced alcohol dependence symptoms such as shakes, fevers, delirium, hallucinations and blackouts in the 6 months before baseline.

Procedure

Recruitment and follow-up procedures are described in detail in Finney and Moos (1995), and are briefly recapitulated here. Alcoholic individuals were recruited at detoxification centers and alcoholism information and referral services and asked to complete a self-administered inventory. Participants were followed 3 and 8 years later and asked to complete the inventory again. The inventory covered demographic information and other areas described below.

Measures

In addition to demographic variables, three sets of variables were used as predictors: baseline alcohol-related problems and depression, professional treatment received in the 3 years following baseline, and social and community resources. The measures of baseline problems were as follows: *Alcohol consumption* was calculated (in ounces of ethanol) based on the respondent's report of consumption of distilled spirits, wine and beer on typical drinking days in the past month. Participants were also asked whether they had consumed any alcohol at all in the past 6 months. *Alcohol dependence symptoms* (range 0-44, $\alpha = .88$) experienced in the past 6 months were measured using 11 items (response range from 0 = "Never" to 4 = "Often") from the Alcohol Dependence Scale (Skinner and Allen, 1982). *Depression* was measured using a nine-item symptom scale (range 0-36, $\alpha = .92$) based on Research Diagnostic Criteria for depression (Spitzer et al., 1978).

Treatment received by participants was measured at 3-year follow-up. Participants reported on *days of inpatient treatment* (including residential treatment and halfway houses) and *sessions of outpatient treatment* received since baseline.

Social and community resources included four variables: *Alcoholics Anonymous meetings* and *religious services* attended since baseline were measured at 3-year follow-up. To measure quality of relationships with friends, extended family and spouse/partner at baseline, three scales with acceptable psychometric properties were adapted from the Life Stressors and Social Resources Inventory (Moos and Moos,

1994). These scales were coded so that high scores reflected relationships in which participants felt respected, understood and supported and low scores reflected the absence of such qualities. The *Friendship Quality* scale ($\alpha = .83$) and the *Extended Family Quality* scale ($\alpha = .75$) had six items (range 0-24) and the *Spouse/Partner Quality* scale had 10 items (range 0-40, $\alpha = .91$). In order to avoid substantial missing data and loss of statistical power, we included spouse/partner quality as a predictor only in an analysis where it was also the dependent variable.

The key outcome of the study was *Remission*, measured as a dichotomous variable. Individuals were classified as remitted at 8 years if they reported no alcohol consumption, no dependence symptoms and no drinking-related problems in the previous 6 months. Drinking-related problems were measured by a nine-item scale (range 0-36, $\alpha = .80$) that tapped the degree to which drinking had produced negative consequences at work, with family, with physical health and with the law in the past 6 months. It is used here only as a component of the outcome measure rather than as a baseline predictor because of its high correlation (.65) with baseline alcohol dependence.

Because remission measures that aggregate results for alcohol consumption, drinking-related problems and dependence symptoms are often criticized for combining entities that are distinct (see Clark and Cahalan, 1976), we analyzed the proportion of individuals who met all versus only one of our remission criteria. Of those reporting no alcohol consumption in the past 6 months ($n = 198$), 98.4% ($n = 195$) also reported no drinking-related problems and 99.0% ($n = 196$) reported no alcohol dependence symptoms, indicating that our remission criteria had construct validity.

We also evaluated whether the 6-month window for remission was representative of participants' drinking careers by examining alcohol-related admissions to inpatient/residential treatment programs, hospitals, halfway houses and detoxification units in the 5 years prior to 8-year follow-up. Of the 195 participants classified as remitted, 167 (85.6%) had not had any such admission in the 5 years prior to follow-up. For the 28 individuals classified as not remitted, the most recent admission occurred an average of 27 months prior to follow-up. These data support the conclusion that the 6-month remission window gave a representative behavior sample of the participants' drinking problems.

The reliability and validity of participants' self-reports of drinking were assessed through analyses of data collected from collaterals (e.g., spouses). Results indicated that participants did not systematically underreport drinking-related information (for a detailed analysis, see Finney and Moos, 1995).

Psychosocial outcomes were measured at 8 years using the same scales used at baseline. These outcomes were depression, friendship quality, extended family quality and spouse/partner relationship quality. A correlation matrix showed that the five outcome measures used in the study were fairly independent, with the absolute value of Pearson's r ranging from .05 to .38.

TABLE 1. Change in primary study variables over 8 years in a sample of 395 alcoholic individuals

Variable	Baseline	3-Year	8-Year
Married (%)	22.8	26.6	37.2
Employed (%)	46.3	72.4	63.3
Remitted (%)	0.0	43.0	49.4
	MEAN (\pm SD)	MEAN (\pm SD)	MEAN (\pm SD)
Fam. income ^a	28.5 \pm 22.4	28.9 \pm 17.0	28.6 \pm 18.9
Alcohol consumption ^b	12.4 \pm 10.5	3.6 \pm 7.1	3.9 \pm 8.7
Dependence symptoms	10.6 \pm 8.2	3.2 \pm 6.5	3.0 \pm 6.8
Drinking problems	10.5 \pm 7.2	3.1 \pm 5.7	2.6 \pm 5.5
Depression	20.8 \pm 8.8	13.1 \pm 8.0	12.9 \pm 7.9
Extended fam. support	7.4 \pm 3.1	7.7 \pm 3.0	7.6 \pm 3.0
Friend support	17.2 \pm 4.9	18.4 \pm 4.7	18.5 \pm 4.3
Partner/spouse support ^c	28.0 \pm 8.4	31.6 \pm 7.1	31.3 \pm 7.2

^aTotal family income in 1994 U.S. dollars (in 1,000s).

^bOunces of ethanol consumption on typical drinking days.

^c $n = 261$ at baseline, $n = 256$ at 3-year follow-up, $n = 280$ at 8-year follow-up.

Results

As shown in Table 1, participants had low social stability (e.g., 22.8% married, 46.3% employed) and severe alcohol problems (e.g., 12.4 ounces of ethanol consumed on typical drinking days) at baseline. However, on average, there was marked improvement in the sample by the 8-year follow-up, at which time 195 participants (49.4%) were in remission. Of those remitted at 3 years, 83.5% ($n = 142$) met remission criteria at 8-year follow-up. Of those not remitted at 3 years, 76.4% ($n = 172$) were also not remitted at 8 years.

In the first 3 years of the study, rates of participation in inpatient (43.3%) and outpatient (42.5%) treatment were similar. These proportions include the 20.7% ($n = 82$) of the sample who received both forms of treatment. Combining all treatment episodes, inpatients received an average (\pm SD) of 84.2 \pm 102.0 days of treatment, and outpatients attended an average of 40.3 \pm 42.3 sessions. Almost two-thirds (64.3%) of the sample attended at least one AA meeting within 3 years of baseline, and, on average, involvement with the organization was intense (mean = 104.9 \pm 103.7 meetings). Individuals who attended religious services (63.8% of the sample) went to an average of 37.3 \pm 61.6 services in the 3 years.

Prediction of 8-year remission

Remission was predicted using logistic regression (see Table 2). Higher scores on variables that have positive b weights were predictive of good drinking outcome. The exponentiated b weights (Exp[B]) express the increase in odds of having good outcome for each unit increase in the independent variable when all other independent variables are held constant. For example, women were 1.63 times more likely to be remitted at 8 years than were men, holding all other predictors constant. When gender was considered independently, remission rates were 43.4% for men and 55.3% for women.

TABLE 2. Logistic regression equations predicting remission at 8 years after baseline

	Remitted (0 = no, 1 = yes)	
	b (± SE)	Exp(B)
Baseline demographics		
Age	0.14 ± .013	1.014
Sex (0 = male, 1 = female)	.491 ± .248*	1.634
Married (0 = no, 1 = yes)	.435 ± .309	1.545
Employed (0 = no, 1 = yes)	.270 ± .256	1.310
Family income (U.S.\$)	-.004 ± .008	0.997
Baseline problems		
Alcohol consumption	.020 ± .012	1.020
Alcohol dependence	.024 ± .018	1.025
Depression	.001 ± .016	1.001
Treatment, first 3 years		
Outpatient sessions	.011 ± .004*	1.011
Inpatient days	.001 ± .002	1.001
Community Resources		
AA meetings, 0-3 years	.007 ± .002 [§]	1.007
Relig. serv., 0-3 years	-.002 ± .002	0.998
Baseline friend quality	-.066 ± .028*	0.936
Baseline family quality	0.85 ± .042*	1.089

Note: 69.7% of the individuals were correctly classified by the model.
 *p < .05. §p < .0001.

Other than gender, none of the demographic variables were significant predictors. Because of the differential attrition in the study for married and employed participants, we also examined remission rates for these two variables independently. Remission rates were virtually identical for employed (49.7%) and unemployed (49.0%), married (51.1%) and unmarried (48.9%) participants.

Outpatient treatment sessions and AA meetings attended in the first 3 years were both predictive of good outcome at 8 years. The beneficial effect per unit (session or meeting) was slightly higher for outpatient treatment

(Exp[B] = 1.011) than for AA meetings (Exp[B] = 1.007). However, on average, individuals who attended AA participated more intensively in AA than individuals who received outpatient services participated in treatment. Thus, the average benefit of AA participation (104.9 meetings × .007 + 1 = 1.73 times higher likelihood of remission) was greater than the average benefit of outpatient treatment (40.3 sessions × .011 + 1 = 1.44 times higher likelihood of remission).

Inpatient treatment and religious services in the first 3 years showed no relationship to 8-year remission. Higher quality friendships at baseline was significantly predictive of lower likelihood of remission, whereas higher quality of extended family relationships was predictive of remission. Given the length of the interval over which outcome was predicted, a surprisingly high proportion of individuals (69.7%) were correctly classified by the model ($\chi^2 = 77.96$, 14 df, $p < .001$).

Prediction of 8-year psychosocial functioning

The four continuous outcome variables were predicted using ordinary least squares multiple regression (see Table 3). The model predicting depression explained 11.8% of the variance at 8 years ($F = 3.41$, 14/380 df, $p < .0001$). Baseline depression and alcohol dependence symptoms predicted higher depression at follow-up. The number of Alcoholics Anonymous meetings attended in the first 3 years predicted lower levels of depression at 8 years.

The model explained 20.6% of the variance in friendship quality at 8 years ($F = 6.59$, 14/380 df, $p < .0001$). Women had higher quality friendships at follow-up than did men.

TABLE 3. Regressions predicting continuous outcomes at 8 years

	Depression		Friend quality		Family quality		Partner quality	
	b	SE	b	SE	b	SE	b	SE
Baseline demographics								
Age	-.05	.04	-.01	.02	.01	.02	.02	.06
Sex (0 = male, 1 = female)	.89	.85	1.89 [†]	.43	.70*	.29	-.42	1.07
Married (0 = no, 1 = yes)	.05	1.06	-.25	.54	-.86*	.37	-.65	1.19
Employed (0 = no, 1 = yes)	-.36	.87	.00	.45	-.22	.30	-.35	1.08
Family income (U.S.\$)	.00	.03	.01	.01	.03 [†]	.01	.07*	.03
Baseline problems								
Alcohol consumption	-.02	.04	.01	.02	.03	.01	-.06	.06
Alcohol dependence	.13*	.06	.01	.03	.02	.02	.05	.09
Depression	.18 [†]	.06	-.03	.03	-.01	.02	-.08	.08
Treatment, first 3 years								
Outpatient sessions	.00	.01	-.01	.01	.00	.00	-.01	.02
Inpatient days	.00	.01	.00	.00	.00	.00	-.01	.01
Social-community resources								
AA meetings, 0-3 years	-.01*	.00	.01*	.00	.00	.00	.01*	.01
Relig. serv., 0-3 years	.01	.01	.00	.00	.00	.00	.02	.01
Baseline friend quality	.00	.09	.25 [†]	.05	.02	.03	.04	.12
Baseline family quality	-.22	.14	.18 [†]	.07	.43 [†]	.05	.00	.17
Baseline spouse quality ^a	-	-	-	-	-	-	.17 [†]	.07
R ²	.118 [†]		.206 [†]		.259 [†]		.168 [†]	

*p ≤ .05. †p ≤ .01.

^aSample size for partner quality equation is 204; missing data indicate variable not included in equation.

More AA meetings, higher quality friendships at baseline and higher quality of extended family relationships predicted higher quality friendships at 8 years, but religious services and treatment did not.

Demographic variables explained a significant proportion of variance in 8-year extended family relationship quality. Being female, unmarried and having higher family income all were predictive of higher extended family relationship quality. As expected, extended family relationship quality also predicted itself over 8 years. As a group, the predictors explained 25.9% of the variance in 8-year extended family relationship quality ($F = 8.80, 14/380 \text{ df}, p < .0001$).

For the equation predicting quality of relationship with spouse/partner, we were restricted to the 204 participants who had a spouse or partner at intake and follow-up. The model predicted 16.8% of outcome variance ($F = 2.40, 15/188 \text{ df}, p < .005$). Higher baseline spouse/partner relationship quality and total family income predicted higher partner/spouse relationship quality at follow-up. Attending more AA meetings again predicted better outcome, but treatment and religious services did not.

Discussion

Half of the sample was free of alcohol-related problems 8 years after having severe alcohol problems. This rate of remission is comparable to those found in a 10-year follow-up of 113 treated alcoholic individuals (Moos et al., 1990), and in a 20-30 year follow-up of 268 alcohol-abusing white men (Vaillant, 1996). Even if we assume that all the participants who were lost to 8-year follow-up ($n = 113$) or died ($n = 49$) had poor drinking outcome, this would still constitute a remission rate of 35%, which is some cause for optimism. Because our analysis of study attrition suggested that subjects lost to follow-up had only slightly more severe problems, the actual remission rate is probably significantly higher than 35%. At the same time, a large proportion of the sample experienced severe alcohol problems at multiple follow-up points, indicating the seriousness of alcoholism and the importance of discovering what promotes its continuance or remission.

What predicts the long-term course of alcoholism? Like Edwards (1989), we would conclude that the course of alcoholism is not easy to predict. The instability of the disorder is underscored by the fact that baseline alcohol dependence symptoms and alcohol consumption were not related to remission at follow-up. Our model classified 70% of individuals correctly—a substantial improvement over the 51% one would obtain by guessing based on the base rate of remission—but, still, we were incorrect for almost a third of the sample.

In the long term, life context factors such as those studied here may better explain the continuance or remission of alcoholism than does problem severity measured at any given point (Koski-Jännes, 1992). Among the life contexts that appear important in predicting long-term alcohol-related and psychosocial outcomes are relationships with friends, ex-

tended family and spouse/partner. Baseline family relationship quality appears the most clearly beneficial, being predictive of remission and higher quality friendships and family relationships at 8-year follow-up. This parallels an earlier finding in our sample: Among alcoholic individuals who lacked other social resources (e.g., were unmarried and/or unemployed), higher quality extended family relationships predicted lower alcohol consumption and fewer drinking problems 3 years after baseline (Humphreys et al., 1996).

The role of friends was surprising: Higher quality friendships at baseline predicted continued drinking problems. The most likely explanation is that, among problem drinkers, support from friends is not contingent on reducing alcohol consumption, and, in fact, may encourage heavy drinking (Beattie et al., 1993). In support of this interpretation, our 3-year analyses of this sample showed that friendship quality at baseline (i.e., before participants had ever gone for help about their drinking) was not related to outcome at 1 year, but higher friendship quality at 1 year predicted better 3-year drinking outcome (Humphreys et al., 1996). When individuals are drinking heavily, support from friends can promote continued drinking. In contrast, when alcoholic individuals make efforts to stop drinking, support from friends can promote recovery.

Why does the quality of extended family relationships consistently predict improvement whereas the quality of friendships does not? Family members may be more likely to make support contingent on reduced alcohol-related problems than are friends because family members are more likely to bear the consequences of an individual's alcoholism. Further, an individual who is trying to recover can replace old friends with new ones, whereas extended family members are obviously not replaceable.

In terms of demographic factors, we did not find any effects for age on our outcomes, perhaps because our sample was slightly beyond the age typically associated with the "maturing out" many heavy drinkers undergo in their late 20s. However, this study identified some important gender differences. At 8-year follow-up, women were more likely than men to be remitted, and had higher quality friendships and extended family relationships. Differences in relationships with others may be one of the mediators through which gender exerts its influence on the course of alcoholism. For example, Moos and colleagues (1990) found that being married predicted a higher likelihood of 6-month abstinence for treated alcoholic men, but a lower likelihood for treated alcoholic women. The gender differences found here may also reflect women experiencing more social disapproval for continued drinking than do men (Gomberg, 1991).

Our earlier studies of this sample showed that more inpatient treatment was associated with improvements in alcohol-related problems and psychosocial outcomes at 1- and 3-year follow-up (Timko et al., 1994, 1995). The current study showed that amount of inpatient treatment over the first 3 years did not predict our five 8-year outcomes. Inpatient treatment probably does not show lasting effects because it is typically of short duration and is divorced from the contexts in which al-

coholism develops and is maintained. As in other long-term studies, our project suggests that the most reasonable promise we can make to alcoholic individuals about inpatient treatment is that it has the potential to provide short-term relief and an opportunity for lasting change if additional changes are made in the individual's life for an extended period.

In contrast, outpatient sessions sought in the first 3 years of the study predicted remission 8 years after baseline. If we return to the idea of alcoholism as a contextually embedded, chronic disorder, we might explain the impact of outpatient treatment by the fact that it was provided over longer periods (e.g., 40 weekly sessions) and occurred while patients were immersed in their life contexts and thus could discuss everyday problems with a helping professional. Although we did not find any long-term psychosocial benefits to outpatient treatment, we view its effect on long-term remission as a good omen, given that many health care systems (e.g., the Department of Veterans Affairs) are currently expanding their use of intensive, long-term outpatient programs.

In addition to treatment, we also examined religious organizations and AA as potential influences on long-term course. Although being religious (which admittedly may be poorly indexed by religious service attendance) is robustly associated with not being a heavy drinker (Gorsuch, 1983), we did not find any evidence that it helps resolve alcoholism once it has developed. In contrast, we found consistent and long-lasting positive effects of participation in AA. Individuals who attended more AA meetings in the first 3 years of the study were more likely to be free of alcohol problems and had lower levels of depression and higher quality relationships with friends and their partners/spouse at follow-up than did those who attended few or no meetings. Thus, among our predictors, AA had the broadest impact across outcome domains. We found similar positive effects for AA at earlier points in the study (Humphreys et al., 1994, 1995; Timko et al., 1994, 1995).

These effects of AA do not appear to be an artifact of self-selection. An analysis of this sample using econometric procedures (two-stage sample selection models) indicated that selection into AA was prognostically adverse—that is, the bias caused by self-selection tends to understate rather than overstate AA's effectiveness (Humphreys et al., in press). Moreover, a recent study (McKay et al., 1994) found that posttreatment substance abuse self-help group attendance decreased the likelihood of relapse even when patient motivation was controlled by using completion of treatment as a covariate.

AA may be a long-term predictor of recovery because it is widely available, can be attended for extended periods, offers hope and a new outlook on life, and provides a network of supportive people who do not use alcohol. AA is a comprehensive long-term "way of living and being" (Miller and Kurtz, 1994) and hence is well-matched to a long-term, contextually embedded disorder like alcoholism, which itself has been described as a (self-destructive) way of living and being (Fingarette, 1991).

Some clinicians and researchers debate whether AA or professional treatment is "better." Our findings suggest that

formulating the issue in this fashion confounds two questions that should be kept distinct. The first question concerns dose/response: "Is an hour (or a day, or a month) in professional treatment better than an hour (or a day, or a month) of contact with AA?" The second question is: "Assuming both professional treatment and AA have at least some positive effect, which one is going to be more influential in the lives of more alcoholic individuals in the real world?" In terms of the first question, our data suggest that the dose/response effect for an outpatient treatment session is slightly higher than that for an AA meeting. However, more people go to AA and attend for longer periods, so despite its lower "dose-response" AA probably helped more people more substantially in this sample than did outpatient treatment because it was more accessible (for a similar argument see Vaillant and Milofsky, 1982).

We acknowledge that long-term naturalistic studies are often criticized on the grounds that, unlike randomized clinical trials, they cannot support strong conclusions about causes and effects. In this vein, some would argue that our findings on the positive relationship of number of outpatient treatment sessions and AA meetings attended to better outcome are merely the result of more motivated individuals seeking out more help, and are not attributable to treatment or AA. Not surprisingly, we have a different point of view on this issue.

Motivation is not a static, acontextual trait that alcoholic individuals carry with them. As has been demonstrated in both clinical and experimental settings (see Kanfer and Scheft, 1988), individuals' motivation to change is shaped by the interactions they have with those who are trying to help them. Part of what effective therapists do is increase commitment to change, which leads to initial therapeutic successes, more contact with treatment and more motivation to attempt greater changes.

Randomized clinical trials in which length of treatment is fixed prevent a real-world difference in treatment effectiveness from coming to light: Some treatments or self-help groups are more likely than others to transform individuals' perhaps hesitant or begrudging initial visit into a lasting engagement and commitment to change. Naturalistic longitudinal studies are the only way to capture these dynamic processes and to thereby shed light on how alcoholism is resolved or continues to cause suffering in the real world, where change continues long after the typical clinical trial follow-up study is complete.

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