

In 12-step groups, helping helps the helper

Sarah E. Zemore, Lee Ann Kaskutas & Lyndsay N. Ammon

Alcohol Research Group, Berkeley, CA, USA

Correspondence to:

Sarah E. Zemore
Alcohol Research Group
2000 Hearst Avenue, Suite 300
Berkeley, CA 94709-2176
USA
Tel: +1 510 642 5208
Fax: +1 510 642 7175
E-mail: szemore@arg.org

Submitted 1 December 2002;
initial review completed 3 February 2003;
final version accepted 23 March 2004

ABSTRACT

Aims The helper therapy principle suggests that, within mutual-help groups, those who help others help themselves. The current study examines whether clients in treatment for alcohol and drug problems benefit from helping others, and how helping relates to 12-step involvement.

Design Longitudinal treatment outcome.

Participants An ethnically diverse community sample of 279 alcohol- and/or drug-dependent individuals (162 males, 117 females) was recruited through advertisement and treatment referral from Northern California Bay Area communities. Participants were treated at one of four day-treatment programs.

Measurements A helping checklist measured the amount of time participants spent, during treatment, helping others by sharing experiences, explaining how to get help and giving advice on housing and employment. Measures of 12-step involvement and substance use outcomes were administered at baseline and a 6 month follow-up.

Findings Helping and 12-step involvement emerged as important and related predictors of treatment outcomes. In the general sample, total abstinence at follow-up was strongly and positively predicted by 12-step involvement at follow-up, but not by helping during treatment; still, helping positively predicted subsequent 12-step involvement. Among individuals still drinking at follow-up, helping during treatment predicted a lower probability of binge drinking, whereas effects for 12-step involvement proved inconsistent.

Conclusions Findings support the helper therapy principle and clarify the process of 12-step affiliation.

KEYWORDS 12-step groups, Alcoholics Anonymous, helping, treatment outcome.

INTRODUCTION

Twelve-step groups such as Alcoholics Anonymous (AA), Cocaine Anonymous (CA) and Narcotics Anonymous (NA) consider that helping others makes recovery possible. Twelve-step literature explicitly encourages helping as part of the recovery process, a point reinforced dramatically by AA's twelfth step: 'having had a spiritual awakening as a result of these steps, we tried to carry this message to other alcoholics, and to practise these principles in all our affairs' (Alcoholics Anonymous World Services 1991). Helping is also an implicit component of 12-step groups: helping undergirds the member-sponsor

relationship and may strengthen group bonding and communication. Still, little empirical work addresses the relationships between helping, 12-step affiliation and recovery from substance dependence. The current paper helps fill this gap, exploring the role of helping in recovery among a longitudinal sample of substance-dependent individuals.

Twelve-step involvement and recovery

Reviews have consistently concluded that 12-step participation can enhance treatment outcomes among problem drinkers (Emrick *et al.* 1993; Tonigan *et al.* 1996;

McIntire 2000); further, higher intensity of involvement has been associated with better drinking outcomes (Emrick *et al.* 1993). Likewise, research on NA typically supports the efficacy of this approach (Alford *et al.* 1991; Johnsen & Herringer 1993; Christo & Franey 1995; Toumbourou *et al.* 2002). Although investigators have critiqued 12-step research on methodological grounds (Emrick *et al.* 1993; Kownacki & Shadish 1999), methodologically rigorous research has come to similar conclusions. Project MATCH, in a clinical trial examining client-treatment matching effects, reported positive, moderate associations between 12-step attendance and abstinence rates both during treatment and through the 12-month follow-up (Tonigan 2001). These findings echo Emrick *et al.*'s (1993) meta-analytic finding of positive, 'modest' correlations between AA attendance and drinking outcomes. Changes in social networks (Humphreys & Noke 1997; Longabaugh *et al.* 1998; Kaskutas *et al.* 2002), coping strategies (Humphreys *et al.* 1999) and/or overall psychological functioning (Humphreys *et al.* 1997) may explain such positive associations.

Despite the apparent benefits of 12-step participation, evidence suggests that a majority of those seeking treatment for substance-related problems either never initiate or fail to sustain regular attendance through the year following treatment (Tonigan *et al.* 2003). Consequently, researchers have sought to identify key determinants of 12-step affiliation—with little success. While AA's surveys indicate a predominantly white (86%) and male (67%) membership (Alcoholics Anonymous 1997), gender, race and other demographic variables play inconsistent roles, if any, in predicting involvement among alcohol-dependent individuals (Emrick *et al.* 1993). Likewise, research has established few robust psychological predictors of affiliation. Exceptions include problem severity (Humphreys *et al.* 1991; Emrick *et al.* 1993; Humphreys *et al.* 1998b; Brown *et al.* 2001; Connors *et al.* 2001) and spirituality (Fichter 1982; Winzelberg & Humphreys 1999; Fiorentine & Hillhouse 2000; Tonigan *et al.* 2001b), both of which positively predict affiliation.

Helping-related attitudes and behaviors, although little studied, could play various roles in relation to 12-step groups. A helping orientation could act as an influence on, or consequence of, 12-step involvement; helping might also mediate or moderate the effects of involvement on substance use outcomes. And regardless of its relationship to 12-step affiliation, indications suggest that helping constitutes an important force in recovery.

Helping and recovery

Frank Riessman, a researcher of mutual-help groups, proposed in his 'helper therapy principle' (Riessman

1965, 1976) that those who help others indirectly help themselves. In Riessman's view, helping benefits helpers because it increases one's commitment to recovery, perception of importance to others, social status and sense of independence. Indeed, general-population surveys have repeatedly shown positive associations between helping and psychological health (e.g. lower depression and higher self-esteem; Piliavin 2003).

Riessman's ideas dovetail with Yalom's influential theory on change processes in group therapy (Yalom 1970, 1975). Yalom lists altruism, a sense of having helped group members through sharing and giving, as one of his 12 curative factors. Supporting the centrality of this factor, Emrick, Lassen & Edwards (1977), reviewing the AA literature for 'direct and indirect' references to Yalom's factors, found that altruism was the most frequently cited factor.

Three quantitative studies have related helping to outcomes within group therapy. Schiff & Bargal (2000), studying 11 mutual-help groups (e.g. Overeaters Anonymous, Debtors Anonymous and groups for homosexuals), found that offering experiential knowledge correlated with higher subjective well-being and group satisfaction. Maton (1988), sampling three groups (i.e. Overeaters Anonymous, Multiple Sclerosis and Compassionate Friends, a group for the bereaved), reported that providing support predicted lower depression, higher self-esteem and higher group satisfaction. The third, a methodologically rigorous study of a group for people with mental health problems, reported that more observed helping predicted better psychosocial adjustment (Roberts *et al.* 1999). Yet, no study has explored helping among substance-dependent individuals.

The current research

The current research examines three hypotheses relating 12-step involvement and helping to each other and to treatment outcomes:

- 1 *Greater 12-step involvement prior to treatment (measured at baseline) will predict more helping during treatment.* Twelve-step groups encourage members to help themselves by helping others—to share experiences, listen to stories, make coffee at meetings and so on. Thus, 12-step involvement prior to treatment should accustom individuals to helping others, increasing helping during treatment.
- 2 *More helping during treatment will predict greater 12-step involvement at follow-up.* Just as 12-step involvement prior to treatment should accustom individuals to helping during treatment, helping during treatment should prepare individuals to help other members of 12-step groups, facilitating their transition into 12-step culture.

3 *More helping during treatment and greater 12-step involvement at follow-up will predict better treatment outcomes at follow-up.* Both helping and 12-step involvement should, based on the forgoing review, influence treatment outcomes positively (including abstinence and binge drinking).

METHOD

Sample

A community sample (final $n = 279$) of alcohol- and/or drug-dependent individuals was recruited between May 1998 and December 2000 from Northern California Bay Area communities. Recruitment protocols included extensive outreach, collecting participants via television advertisements (35%), newspaper advertisements and posters (26%), and via local detoxification programs (39%). To be eligible for the study, participants had to be 18 or older, be diagnosed with alcohol and/or drug dependence, report no psychoses, have stable housing, have 72 hours or more of clean and sober time and provide consent to participate in a randomized trial. Eligibility requirements also demanded that participants had had no treatment (beyond detoxification) in the previous 30 days. Treatment was free and included paid transportation. Screening and interviewing were conducted by research staff; subjects received \$85 for their participation.

A total of 822 individuals completed phone screenings, 303 of whom were eliminated because they had not completed detoxification (69%), had psychiatric problems or needed a different level of care (11%), had been in treatment within the past 30 days (9%) or for other reasons (11%). Of the remaining 519, 302 presented for their baseline interview. There were no gender differences between eligible participants who did and did not present at baseline; however, non-whites were slightly less likely than whites to present ($P = 0.02$). Participants were assigned, by field workers using urn randomization, to one of the four treatment programs. Ninety-two per cent of participants completing the baseline ($n = 279$) provided data through the 6 month follow-up and were included in the analysis.

The final sample (162 males, 117 females) included individuals diagnosed with dependence on drugs (39%), alcohol (27%) and both alcohol and drugs (34%). Participants were 51% white, 37% black, 9% Hispanic and 3% other, varying widely on age (mean = 41, SD = 9.3, range 19–75) and income (mean = \$6718, SD = \$14 347, range \$0–144 000)—although 58% reported earning less than \$25 000 per year. Mean problem severity was high (e.g. ASI Alcohol Severity, mean = 0.39, SD = 0.33;

ASI Drug Severity, mean = 0.15, SD = 0.12). Most (72%) had received prior substance abuse treatment, and most (85%) reported prior 12-step involvement.

Study sites

Study sites were three mixed-gender programs and one women-only program. All sites offered group-oriented day treatment; planned treatment dose ranged from 3 to 6 weeks. Participants frequently received less than the planned dose (mean and median number of days in treatment = 11.3 and 13.0, respectively; SE = 0.58); furthermore, 22% ($n = 60$) attended no treatment sessions. However, length of stay did not differ across program [$F_{(3, 275)} = 0.64$, $P = 0.59$].

Study programs diverged somewhat in treatment orientation, but all incorporated 12-step philosophy and some recovering staff. One was hospital-based ($n = 128$), a hybrid model blending professional medical and behavioral science with 12-step principles. Three were community-based programs, including two mixed-gender ($n = 55$ and $n = 67$, respectively) and one women-only ($n = 29$). These programs emphasized experiential learning and 12-step principles in both program content and organization, with no medical staff and many non-degreed counselors.

Study protocol

Participants completed study measures during three interviews. Baseline interviews were administered in person and prior to treatment; follow-ups were telephone interviews occurring during treatment (on the final day of an individual's treatment or as soon thereafter as possible) and 6 months after treatment initiation.

Primary Measures

Twelve-step involvement

An eight-item scale assessed 12-step involvement. On six items, respondents selected 'yes' or 'no' to indicate experience with AA/NA/CA practices or events (i.e. sponsoring, being sponsored, calling a member for help, reading the literature, doing service work and experiencing a spiritual awakening). Respondents also indicated whether they considered themselves members, and how many meetings they had attended in the preceding year (baseline measure) or 6 months (6 month follow-up). All responses, excluding those to the meeting question, were assigned a 0 (for 'no') or 1 (for 'yes'); for meetings, responses were split into quartiles and assigned a 0, 0.25, 0.50, 0.75 or 1. Items were averaged to create summary scores ranging from 0 to 1. Previous research on a nine-

Table 1 Distribution of time spent helping the previous day.

	% Spending no time helping this way	% Spending 1–30 min helping this way	% Spending 31–60 min helping this way	% Spending more than 1 hour helping this way
Giving moral support or encouragement	31	29	14	26
Sharing experiences about staying clean and sober	41	32	14	13
Sharing experiences about other problems	42	35	13	10
Explaining how to get help at the program	61	25	8	6
Explaining how to get help outside the program	63	26	6	5
Sharing experiences about finding a job	71	20	4	5
Giving advice about housing	85	12	2	1

item version supports the scale's reliability and validity (Humphreys *et al.* 1998a). Here, baseline and follow-up measures also demonstrated good reliability ($\alpha = 0.82$ for both).

Helping

Seven questions assessed helping during treatment (see Table 1). For each, respondents indicated how much time they had spent, on the preceding day, helping others in recovery. Choices included 0 minutes, 1–15 minutes, 16–30 minutes, 31–45 minutes, 46 minutes to 1 hour or over 1 hour. Responses were recoded as '0' (for the first category), '1' (for the second category) and so on. Scale analyses suggested dropping two items showing low variability and low item-total correlations (i.e. sharing experiences about getting a job and giving advice about housing). This reduced the original scale to five items ($\alpha = 0.73$). Summary scores, created by averaging over items, ranged from 0 to 5.

Substance use outcomes

Treatment outcomes, measured at the 6 month follow-up, included: (i) 30 day abstinence from both alcohol and drugs, and (ii) binge drinking. To assess binge drinking, respondents reported the number of days, if any, in the preceding 30 that they had consumed five or more drinks. Coding differentiated respondents who drank, but never more than four drinks in a day ('moderate drinkers') from participants who drank five or more in a day ('binge drinkers').

Secondary variables

Initial diagnosis and problem severity

Screeners obtained initial diagnoses of alcohol and/or drug dependence using the Quick-DIS (Bucholz *et al.* 1996). Initial problem severity was assessed using the

Addiction Severity Index (ASI). The ASI is a standard measure of addiction severity, demonstrating good validity and reliability (McLellan *et al.* 1985a, 1985b). Items (eight for alcohol, 16 for drug severity) targeted substance use, substance-related problems and the subjective importance of treatment. Responses were averaged within subscales to create composite scores ranging from 0 to 1.

Motivation to change

Baseline measures also included, as a potential confound, a scale measuring stage of change: the University of Rhode Island Change Assessment (URICA) (McConaughy *et al.* 1989; DiClemente & Hughes 1990). Interviews included three items from each subscale (i.e. pre-contemplation, contemplation, action and maintenance). Participants rated their agreement on a scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Preliminary analyses indicated that the majority of participants (76–99%) chose one of two responses consistent with a readiness to change, agreeing or strongly agreeing with the pro-change (i.e. contemplation, action and maintenance) items and disagreeing or strongly disagreeing with the anti-change (i.e. pre-contemplation) items. Thus, responses were coded by assigning a 1 to responses indicating an extreme pro-change attitude ('strongly agree' for pro-change items and 'strongly disagree' for anti-change items) and a 0 to all other responses. Based on factor analyses and consistent with Project MATCH (DiClemente *et al.* 2001), the current study then aggregated scores by reverse-scoring pre-contemplation items and averaging. The result was a 12-item scale ranging from 0 to 1 ($\alpha = 0.83$).

Program variables

Program variables included program assignment (a four-level categorical variable) and length of stay (collected from program records). Because length of stay did not

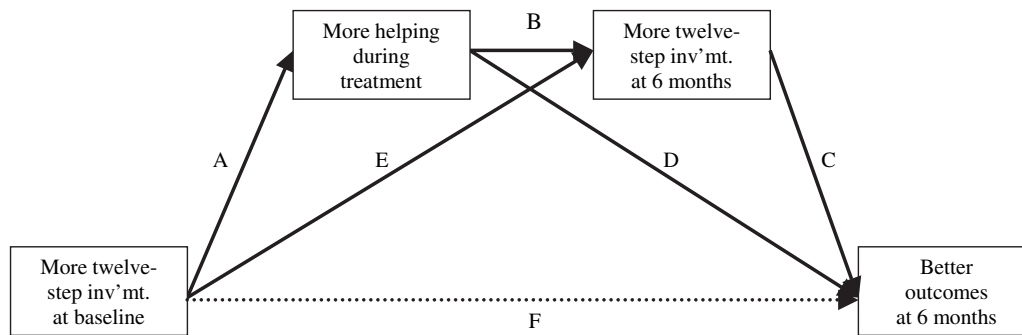


Figure 1 Conceptual model

differ by program (see 'Study sites'), analyses incorporating this variable used raw values rather than adjusting actual by expected length of stay.

Analytic strategy

Core analyses involved path analysis, using weighted least-squares estimation for categorical variables, implemented in MPlus (Muthén & Muthén 1998). Two models examined the study's predictions. The first, using the entire sample, examined relationships between 12-step involvement, helping and abstinence from both alcohol and drugs. The second, isolating the 110 participants still drinking at follow-up, examined relationships between 12-step involvement, helping and binge drinking. Standard correlations and regressions supplemented these analyses.

The conceptual model, equivalent across analyses, is depicted in Fig. 1. Path A derives from hypothesis 1, suggesting that baseline 12-step involvement influences helping during treatment. Path B derives from hypothesis 2, suggesting that helping during treatment influences 12-step involvement at follow-up. Hypothesis 3 specifies effects for both helping during treatment and 12-step involvement at follow-up on substance use outcomes; this implies paths C and D. Path E derives from prior research suggesting that 12-step involvement at a given time point predicts 12-step involvement at a subsequent time point (Tonigan 2001). Path F was not expected to achieve significance, as prior research suggests that distal measures of AA involvement constitute poor predictors of treatment outcome (Miller *et al.* 1997; Tonigan *et al.* 2001a).

All equations predicting treatment outcome included baseline (ASI) measures of problem severity (i.e. model 1 controlled for both alcohol and drug problem severity at baseline; model 2 controlled for alcohol problem severity at baseline). Additional control variables were entered selectively, since over-burdening the model would threaten the reliability of the resulting parameter

estimates. To identify important controls, exploratory analyses (i.e. correlations, *t*-tests, analyses of variance and chi squares) examined associations between all secondary variables (i.e. gender, race, age, income, baseline diagnosis, motivation to change, program assignment and length of stay) and all dependent variables (i.e. 12-step involvement at follow-up, helping and treatment outcomes). Any secondary variable demonstrating a significant association with a given dependent variable was included in equations predicting that variable. Thus, equations in both models included motivation to change (in predicting helping during treatment), program assignment (also predicting helping during treatment) and length of stay (in predicting helping during treatment, 12-step involvement at follow-up and abstinence at follow-up); model 2 additionally included baseline diagnosis (in predicting binge drinking) and race (in predicting 12-step involvement at follow-up).

RESULTS

Both models showed good fit, as indicated by the fit indices (Bentler & Bonett 1980). Additionally, they explained substantial portions of the variance in treatment outcome, 12-step involvement at 6 months and helping during treatment (see Table 2).

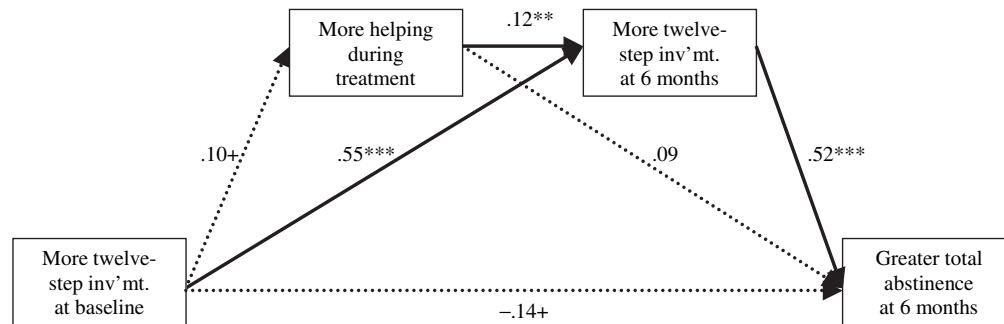
Figures 2 and 3 present parameter estimates and significance levels for the hypothesized pathways. Figure 3 (representing the binge drinking analysis) presents two sets of estimates corresponding to: (i) all participants still drinking at follow-up, and (ii) only drinkers diagnosed, at baseline, with alcohol dependence. The latter results (in parentheses) stem from a secondary analysis introduced in the Discussion.

To verify that the results obtained in the core path analyses did not arise from analytic idiosyncracies, standard regressions were also applied. Six regressions predicted helping during treatment, 12-step involvement at follow-up and treatment outcomes among the general

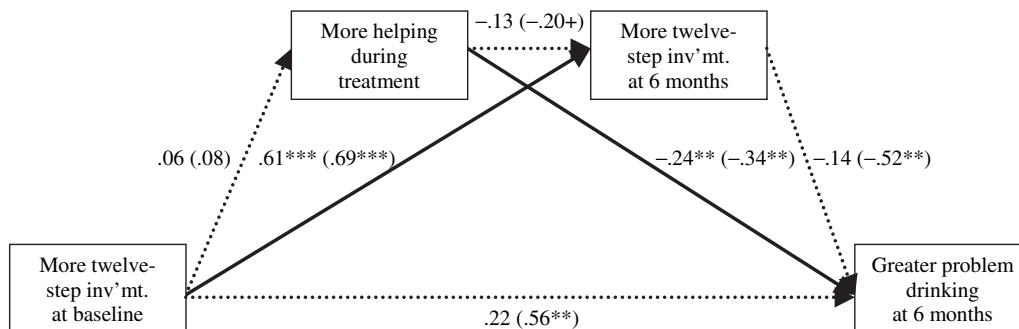
Table 2 Model fit and explanatory power.

	χ^2 , Significance (d.f., n)	CFI	RMSEA	Multiple R^2 : treatment outcome	Multiple R^2 : 12-step involvement at 6 months	Multiple R^2 : helping during treatment
Model 1, total abstinence	11.2, ns (10, 278)	0.99	0.02	0.30	0.35	0.27
Model 2, binge drinking	5.3, ns (10, 106)	1.00	0.00	0.36	0.40	0.25

CFI, comparative fit index; RMSEA, root-mean-square error of approximation.



Note: + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Figure 2 Prediction of abstinence among all participants

Notes: + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Values in parentheses indicate parameter estimates and significance levels when including *only* respondents diagnosed, at baseline, with alcohol dependence.

Figure 3 Prediction of problem drinking among participants drinking at follow-up

sample and among drinkers at follow-up. Each equation incorporated the same independent variables as did the original path analysis. For example, among the general sample, 12-step involvement at follow-up was predicted by involvement at baseline, helping during treatment and length of stay. In every case, the pattern of results replicated results from the path analyses.

DISCUSSION

Hypothesis 1

Although partially supporting the other predictions, the data did not support hypothesis 1. In neither model did

12-step involvement at baseline predict helping during treatment. The temporal gap between baseline measures of involvement (which covered the entire previous year) and helping during treatment may help explain this result. Another possibility is that, although 12-step groups encourage helping generally, the current sample did not respond optimally to their prior involvement, and thus did not adopt 12-step practices as others might. The fact that this sample sought additional treatment suggests that, indeed, they did not acquire the full benefits of participation. A third interpretation is that individuals simply fail to generalize helping learned in 12-step groups to helping within formal treatment.

Hypothesis 2

The data reveal qualified support for hypothesis 2. The results of model 1 suggest that, within the general sample and accounting for baseline 12-step involvement, helping during treatment predicted 12-step involvement at follow-up positively and significantly. This association does not derive from including service-related items in our measure of 12-step involvement: after re-computing the scale while excluding service work and sponsoring, helping during treatment still predicted 12-step involvement significantly. Involvement was correlated moderately with sharing experiences about staying clean and sober ($r=0.24$), sharing experiences about other problems ($r=0.18$) and giving moral support and encouragement ($r=0.18$). Associations were somewhat weaker for explaining how to get help outside the program ($r=0.14$) and explaining how to get help at the program ($r=0.11$).

These results extend prior work on the psychological predictors of 12-step affiliation (Fichter 1982; Winzberg & Humphreys 1999; Fiorentine & Hillhouse 2000; Tonigan *et al.* 2001b) and suggest that helping during treatment may prepare individuals to share reciprocally, understand and accept 12-step philosophy and respond appropriately to social demands, facilitating integration with 12-step groups. Insofar as treatment goals include engaging clients in long-term supportive systems such as AA and NA, programs might consider encouraging helping as a core part of therapy.

Meanwhile, the results of model 1 for hypothesis 2 did not generalize to the subset of participants still drinking at follow-up. In model 2, helping during treatment showed a non-significant, negative relationship with 12-step involvement at follow-up. This result cannot be explained by floor effects or other restrictions in range. Relative to individuals maintaining abstinence, individuals still drinking at follow-up reported low but not insignificant levels of helping and 12-step involvement (e.g. 65% of continuing drinkers reported some meeting attendance). Moreover, drinkers' scores on these variables were associated with relatively higher variance.

This finding could instead indicate a difference in how continuing drinkers approach 12-step groups. Continuing drinkers may, while attending meetings and reading the literature, tend to avoid interdependent relationships because, whether or not they accept the goal of abstinence, they may not believe themselves capable of supporting those who do. If so, then helping should be irrelevant to their subsequent involvement. Although the data here seem to substantiate this argument (e.g. continuing drinkers reported a much lower probability of having a sponsor than abstinent individuals, at 15% versus 51%, but a relatively high rate of reading the

literature, at 62% versus 84%), verifying these speculations will require further research.

Hypothesis 3

Lastly, the results offer qualified support for hypothesis 3. Estimates suggest effects for both helping during treatment and 12-step involvement at follow-up on treatment outcomes, although the pattern of results again differs across models.

Model 1 revealed a strong, positive association between 12-step involvement preceding follow-up and probability of abstinence at follow-up; yet helping during treatment exerted null effects. These results support prior research on the efficacy of 12-step involvement among recovering populations (Emrick *et al.* 1993; Tonigan *et al.* 1996; McIntire 2000; Tonigan 2001). They also suggest that whether or not during-treatment helping temporarily influences abstinence among recovering populations, that influence is later eclipsed by the effects of 12-step involvement. Still, helping was related to treatment outcomes indirectly, by way of influencing 12-step involvement.

In contrast, model 2 produced no effect for 12-step involvement at follow-up, and a significant, negative association between helping during treatment and probability of binge drinking at follow-up. An analysis of variance substantiates this effect, revealing that, relative to abstinent individuals, binge drinkers reported less ($P<0.01$) time helping others, whereas moderate drinkers reported equivalent ($P>0.22$) levels (abstinent, mean = 2.64, SE = 0.11; moderate drinkers, mean = 2.30, SE = 0.19; binge drinkers, mean = 1.89, SE = 0.13).

These null results for 12-step involvement contradict some research showing that binge drinking decreases with involvement (Fiorentine 1999). Perhaps including participants seeking treatment for drug dependence alone distorted the association. Although such participants may reduce their drug use in response to involvement, it seems questionable that they should likewise reduce their alcohol use. To address this possibility, we ran a third model excluding these participants (with $n=69$; see values in parentheses, Fig. 3). In this model, binge drinking at follow-up was again significantly and negatively related to helping during treatment ($\beta=-0.34$, $P<0.01$). Yet the pathway between 12-step involvement at follow-up and binge drinking also became significant ($\beta=-0.52$, $P<0.01$), consistent with the above reasoning.

The association of helping with binge drinking seems to suggest that, among individuals who continue to drink, peer helping commands therapeutic power—a power that may derive from the limited efficacy of formal treatment. In the current sample, drinkers at follow-up

demonstrated, relative to the abstinent, not only less time in treatment but arguably less benefit from their time there: although higher treatment doses predicted higher abstinence rates in the general sample, length of stay bore no relation to binge drinking among drinkers. Faced with the tasks of building relationships, self-esteem and coping strategies, these individuals seem to have turned to, and benefited from, informal relationships. Future research might help determine why such individuals seem less likely to benefit from formal treatment, and what processes explain the association of helping with binge drinking.

Additional findings

Secondary findings offer interesting conclusions on the determinants of helping. Table 1 reveals high mean levels of helping during treatment. At the same time, helping varied significantly by program, with clients at one community program reporting less helping than clients at the hospital-based program. Since assignment was random, this association implies that programs influence clients' helping behavior. Additionally, helping correlated highly with length of stay in treatment ($r = 0.45$) and weakly but significantly with motivation to change ($r = 0.13$). These associations could imply that treatment readiness creates an openness to helping. The effect for length of stay might also reflect an association between staying in treatment and increased opportunities to help. Still, none of these secondary variables accounts for helping's association with binge drinking and 12-step involvement. None but length of stay was associated with these outcomes, and that variable was included as a control across models.

CONCLUSION

The current research, producing partial support for our three hypotheses, suggests that among those seeking treatment for substance dependence, helping during treatment and 12-step involvement play important and related roles in treatment outcomes. Helping seems to play a particularly important role in preventing binge drinking among individuals who continue to drink despite obtaining some treatment. Helping during treatment also seems to facilitate involvement with 12-step groups post-treatment. Study limitations include the current helping checklist, which has not been validated extensively, and the small sample associated with the binge-drinker analysis. These limitations warrant replication of the results. Future work might also explore the mechanisms of action associated with the effect of helping on binge drinking.

Acknowledgements

This study was funded by a grant from the National Institute on Alcohol Abuse and Alcoholism (R01 AA11279). The authors extend their thanks to Dr Jason Bond, Dr Thomasina Borkman and Ms Jennifer Mertens for their comments on the manuscript.

References

- Alcoholics Anonymous (1997) *Alcoholics Anonymous 1996 Membership Survey*. New York: Alcoholics Anonymous.
- Alcoholics Anonymous World Services (1991) *Twelve Steps and Twelve Traditions*. New York: Alcoholics Anonymous.
- Alford, G. S., Koehler, R. A. & Leonard, J. (1991) Alcoholics Anonymous–Narcotics Anonymous model inpatient treatment of chemically dependent adolescents: a 2-year outcome study. *Journal of Studies on Alcohol*, **52**, 118–126.
- Bentler, P. M. & Bonett, D. G. (1980) Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, **88**, 588–606.
- Brown, B. S., O'Grady, K. E., Farrell, E. V., Flechner, I. S. & Nurco, D. N. (2001) Factors associated with frequency of 12-step attendance by drug abuse clients. *American Journal of Drug and Alcohol Abuse*, **27**, 147–160.
- Bucholz, K. K., Marion, S. L., Shayka, J. J. & Marcus, S. C. (1996) A short computer interview for obtaining psychiatric diagnoses. *Psychiatric Services*, **47**, 293–297.
- Christo, G. & Franey, C. (1995) Drug user's spiritual beliefs, locus of control and the disease concept in relation to narcotics anonymous attendance and six-month outcomes. *Drug and Alcohol Dependence*, **38**, 51–56.
- Connors, G. J., Tonigan, J. S. & Miller, W. R. (2001) Religiosity and responsiveness to alcoholism treatments. In: Longabaugh, R. & Wirtz, P. W., eds. *Project MATCH Hypotheses: Results and Causal Chain Analyses*, pp. 166–175. Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism.
- DiClemente, C. C., Carbonari, J., Zweben, A., Morrel, T. & Lee, R. E. (2001) Motivation hypothesis causal chain analysis. In: Longabaugh, R. & Wirtz, P. W., eds. *Project MATCH Hypotheses: Results and Causal Chain Analyses*, pp. 206–222. Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism.
- DiClemente, C. C. & Hughes, S. O. (1990) Stages of change profiles in outpatient alcoholism treatment. *Journal of Substance Abuse*, **2**, 217–235.
- Emrick, C. D., Lassen, C. L. & Edwards, M. T. (1977) Nonprofessional peers as therapeutic agents. In: Gurman, A. S. & Razin, A. M., eds. *Effective Psychotherapy: a Handbook of Research*, pp. 120–161. Elmsford, NY: Pergamon.
- Emrick, C. D., Tonigan, J. S., Montgomery, H. & Little, L. (1993) Alcoholics Anonymous: what is currently known? In: McCrady, B. S. & Miller, W. R., eds. *Research on Alcoholics Anonymous: Opportunities and Alternatives*, pp. 41–78. New Brunswick, NJ: Rutgers Center of Alcohol Studies.
- Fichter, J. H. (1982) *Rehabilitation of Clergy Alcoholics: Ardent Spirits Subdued*. New York: Human Sciences Press.
- Fiorentine, R. (1999) After drug treatment: are 12-step programs effective in maintaining abstinence? *American Journal of Drug and Alcohol Abuse*, **25**, 93–116.
- Fiorentine, R. & Hillhouse, M. P. (2000) Exploring the additive effects of drug misuse treatment and twelve-step involvement:

- does twelve-step ideology matter? *Substance Use and Misuse*, **35**, 367–397.
- Humphreys, K., Mavis, B. E. & Stöffelmayr, B. E. (1991) Factors predicting attendance at self-help groups after substance abuse treatment: preliminary findings. *Journal of Consulting and Clinical Psychology*, **59**, 591–593.
- Humphreys, K., Moos, R. H. & Cohen, C. (1997) Social and community resources and long-term recovery from treated and untreated alcoholism. *Journal of Studies on Alcohol*, **58**, 231–238.
- Humphreys, K. & Noke, J. M. (1997) The influence of post treatment mutual help group participation on the friendship networks of substance abuse patients. *American Journal of Community Psychology*, **25**, 1–16.
- Humphreys, K., Kaskutas, L. A. & Weisner, C. (1998a) The Alcoholics Anonymous Affiliation Scale: development, reliability and norms for diverse treated and untreated populations. *Alcoholism: Clinical and Experimental Research*, **22**, 974–978.
- Humphreys, K., Kaskutas, L. A. & Weisner, C. (1998b) The relationship of pre-treatment Alcoholics Anonymous affiliation with problem severity, social resources and treatment history. *Journal of Drug and Alcohol Dependence*, **49**, 123–131.
- Humphreys, K., Mankowski, E. S., Moos, R. H. & Finney, J. W. (1999) Do enhanced friendship networks and active coping mediate the effect of self-help groups on substance abuse? *Annals of Behavioral Medicine*, **21**, 54–60.
- Johnsen, E. & Herringer, L. G. (1993) A note on the utilization of common support activities and relapse following substance abuse treatment. *Journal of Psychology*, **127**, 73–78.
- Kaskutas, L. A., Bond, J. & Humphreys, K. (2002) Social networks as mediators of the effect of Alcoholics Anonymous. *Addiction*, **97**, 891–900.
- Kownacki, R. J. & Shadish, W. R. (1999) Does Alcoholics Anonymous work? The results from a meta-analysis of controlled experiments. *Substance Use and Misuse*, **34**, 1897–1916.
- Longabaugh, R., Wirtz, P. W., Zweben, A. & Stout, R. L. (1998) Network support for drinking: Alcoholics Anonymous and long-term matching effects. *Addiction*, **93**, 1313–1333.
- Maton, K. I. (1988) Social support, organizational characteristics, psychological well-being and group appraisal in three self-help group populations. *American Journal of Community Psychology*, **16**, 53–77.
- McConaughy, E. A., DiClemente, C. C., Prochaska, J. O. & Velicer, W. F. (1989) Stages of change in psychotherapy: a follow-up report. *Psychotherapy: Theory, Research, Practice, Training*, **26**, 494–503.
- McIntire, D. (2000) How well does AA work? An analysis of published AA surveys (1968–96) and related analyses/comments. *Alcoholism Treatment Quarterly*, **18**, 1–18.
- McLellan, A. T., Luborsky, L., Cacciola, J. S. & Griffith, J. (1985a) *Guide to the Addiction Severity Index: Background, Administration and Field Testing Results*. Report no (ADM) 85-1419. Rockville, MD: US Department of Health and Human Services, National Institute on Drug Abuse.
- McLellan, A. T., Luborsky, L., Cacciola, J. S., Griffith, J., Evans, F., Barr, H. L. & O'Brien, C. P. (1985b) New data from the Addiction Severity Index: reliability and validity in three centers. *Journal of Nervous and Mental Disease*, **173**, 412–423.
- Miller, N. S., Ninonuevo, F. G., Klamen, D. L., Hoffmann, N. G. & Smith, D. E. (1997) Integration of treatment and post-treatment variables in predicting results of abstinence-based outpatient treatment after one year. *Journal of Psychoactive Drugs*, **29**, 239–248.
- Muthén, L. K. & Muthén, B. (1998) *MPlus User's Guide*. Los Angeles, CA: Muthén & Muthén.
- Piliavin, J. A. (2003) Doing well by doing good: benefits for the benefactor. In: Keyes, C. L. M. & Haidt, J., eds. *Flourishing, Positive Psychology and the Life Well-lived*, pp. 227–247. Washington, DC: American Psychological Association.
- Riessman, F. (1965) The 'helper therapy' principle. *Social Work*, **10**, 27–32.
- Riessman, F. (1976) How does self-help work? *Social Policy*, **7**, 41–45.
- Roberts, L. J., Salem, D., Rappaport, J., Toro, P. A., Luke, D. A. & Seidman, E. (1999) Giving and receiving help: interpersonal transactions in mutual-help meetings and psychosocial adjustment of members. *American Journal of Community Psychology*, **27**, 841–867.
- Schiff, M. & Bargal, D. (2000) Helping characteristics of self-help and support groups. Their contribution to participants' subjective well-being. *Small Group Research*, **31**, 275–304.
- Tonigan, J. S. (2001) Benefits of Alcoholics Anonymous attendance: replication of findings between clinical research sites in Project MATCH. *Alcoholism Treatment Quarterly*, **19**, 67–78.
- Tonigan, J. S., Connors, G. J. & Miller (2003) Participation and involvement in Alcoholics Anonymous. In: Babor, T. & Del Boca, F. K., eds. *Matching Alcoholism Treatments to Client Heterogeneity: the Results of Project MATCH*, pp. 184–204. New York: Cambridge University Press.
- Tonigan, J. S., Miller, W. R. & Connors, G. J. (2001a) Prior Alcoholics Anonymous involvement and treatment outcome. In: Longabaugh, R. & Wirtz, P. W., eds. *Project MATCH Hypotheses: Results and Causal Chain Analyses*, pp. 276–284. Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism.
- Tonigan, J. S., Miller, W. R. & Connors, G. J. (2001b) The search for meaning in life as a predictor of alcoholism treatment outcome. In: Longabaugh, R. & Wirtz, P. W., eds. *Project MATCH Hypotheses: Results and Causal Chain Analyses*, pp. 154–165. Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism.
- Tonigan, J. S., Toscova, R. & Miller, W. R. (1996) Meta-analysis of the literature on Alcoholics Anonymous: sample and study characteristics moderate findings. *Journal of Studies on Alcohol*, **57**, 65–72.
- Toumbourou, J. W., Hamilton, M., U'Ren, A., Steven-Jones, P. & Storey, G. (2002) Narcotics Anonymous participation and changes in substance use and social support. *Journal of Substance Abuse Treatment*, **23**, 61–66.
- Winzelberg, A. & Humphreys, K. (1999) Should patients' religiosity influence clinicians' referral to 12-step self-help groups? Evidence from a study of 3,018 male substance abuse patients. *Journal of Consulting and Clinical Psychology*, **67**, 790–794.
- Yalom, I. D. (1970) *The Theory and Practice of Group Psychotherapy*. New York: Basic Books.
- Yalom, I. D. (1975) *The Theory and Practice of Group Psychotherapy*, 2nd edn. New York: Basic Books.