TREATMENT

Initial Preference for Drinking Goal in the Treatment of Alcohol Problems: II. Treatment Outcomes

Simon J. Adamson¹, Nick Heather^{2,*}, Veronica Morton³ and Duncan Raistrick⁴ on behalf of the UKATT Research Team

¹National Addiction Centre, Department of Psychological Medicine, University of Otago at Christchurch, New Zealand, ²School of Psychology & Sport Sciences, Northumbria University, Newcastle upon Tyne, UK, ³Addiction Research Group, Department of Health Sciences, University of York, UK and ⁴Leeds Addiction Unit, Leeds, UK

*Corresponding author: Division of Psychology, Northumbria University, Newcastle upon Tyne, NE1 8ST, UK. Tel: +191-227-4521; Fax: +191-227-3190; E-mail: nick.heather@northumbria.ac.uk

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Abstract — Aims: To compare treatment outcomes between clients preferring abstinence and those preferring non-abstinence at the screening stage of a randomized controlled trial of treatment for alcohol problems (the United Kingdom Alcohol Treatment Trial) and to interpret any differential outcome in light of baseline differences between goal preference groups outlined in an accompanying paper. Methods: Outcomes at 3 and 12 months' follow-up were recorded both in categorical terms (abstinence/non-problem drinking/much improved/somewhat improved/same/worse) and on continuous measures (percent days abstinent, drinks per drinking day/dependence score). Results: Clients initially stating a preference for abstinence showed a better outcome than those stating a preference for non-abstinence. This superior outcome was clearer at 3 months' follow-up but still evident at 12 months' follow-up. The better outcome consisted almost entirely in a greater frequency of abstinent days, with only a modest benefit in drinking intensity for goal abstainers that disappeared when baseline covariates of goal preference were controlled for. Type of successful outcome (abstinence/non-problem drinking) was related to initial goal preference, with clients preferring abstinence more likely to obtain an abstinent outcome and those preferring non-abstinence a non-problem drinking outcome. Conclusion: The client's personal drinking goals should be discussed in assessment at treatment entry and as a basis for negotiation. Clinicians should be prepared to identify and support goal change as an unexceptional part of the treatment process that need not jeopardize good outcome.

INTRODUCTION

A companion paper (Heather *et al.*, 2010) reported a comparison between the baseline characteristics of clients preferring a goal of abstinence and those preferring non-abstinence at the screening stage of a large trial of treatment for alcohol problems, the United Kingdom Alcohol Treatment Trial (UKATT). Predictors of drinking goal preference from variables reflecting client characteristics before the goal preference was made were also reported. The present paper describes and compares treatment outcomes among these two groups of clients—those stating an initial preference for abstinence and those stating a preference for non-abstinence. The analysis here takes account of factors distinguishing between the two drinking goal groups reported in the companion paper.

The controversy surrounding the 'controlled drinking' goal in the treatment of alcohol problems may have stifled research on the consequences of the client's choice of drinking goal (Coldwell and Heather, 2006), whether sanctioned by the therapist or not. Drinking goal is a statement of intended future drinking/abstinence and, as such, should be considered a natural candidate to be a useful predictor of treatment outcome. It is also a variable with immediate clinical resonance given that the client is asked to what extent they intend to change their drinking following the treatment process. In a review of predictors of alcohol treatment outcome, Adamson et al. (2009) identified drinking goal as a promising but under-studied predictor variable. The current paper aims to contribute to this literature and, given the associations between goal preference and client characteristics identified in the accompanying paper (Heather et al., 2010), to refine the analyses to see to what extent any association with outcome is moderated by other clinical features.

METHODS

UKATT was a multi-centre, randomized controlled trial comparing an adaptation of Motivational Enhancement Therapy (Miller *et al.*, 1992b) and Social and Behavioural Network Therapy (Copello *et al.*, 2002, 2009). As this was a pragmatic trial, exclusions were kept to a minimum so that the sample comprises clients aged ≥ 16 years attending alcohol or addiction services in the UK for treatment of a primary alcohol problem and without severe psychotic illness, severe cognitive impairment or illiteracy. Further details of the sample, treatment, therapists and trial procedures are given in the companion paper (Heather *et al.*, 2010) and in UKATT Research Team (2001, 2005).

Assessment

Potential clients were initially screened and also completed a pre-treatment assessment plus 3- and 12-month follow-up interviews. Assessment instruments are described in greater detail in the companion paper (Heather *et al.*, 2010).

Goal preference was identified at the pre-assessment screening interview. Screeners recorded the drinking goal as abstinence or non-abstinence based on an open-ended discussion with the client. Screeners were trained to ensure that the recorded goal reflected the client's wishes rather than being imposed by the clinician. This point was emphasized in supervision throughout the trial.

Outcome was measured at 3 and 12 months. Past 90-day drinking behaviour was assessed by using Form 90I (Miller, 1996) to derive measures of drinking frequency (percent days abstinent: PDA) and drinking intensity (drinks per drinking day: DDD). Dependence severity was assessed by the Leeds Dependence Questionnaire (LDQ; Raistrick *et al.*, 1994).

Table 1. Goal preference and outcome category

Outcome	Non-abstinent goal	Abstinent goal	Odds ratio (95% CI)	P-value
3-month outcome				
Successful outcome	38/301	76/350	1.92	0.003
	12.6%	21.7%	(1.26, 2.94)	
Abstinence (versus non-problem drinking)	12/38	50/76	4.17	0.001
	31.6%	65.8%	(1.81, 9.58)	
12-month outcome			, , ,	
Successful outcome	59/259	91/306	1.44	0.063
	22.8%	29.7%	(0.98, 2.10)	
Abstinence (versus non-problem drinking)	26/59	65/91	3.17	0.001
(1	44.1%	71.4%	(1.60, 6.30)	

Table 2. Goal preference and outcome: continuous measures

Outcome	Non-abstinent goal Mean (SD)	Abstinent goal Mean (SD)	Difference (Abs – non-abs) Mean (95% CI)	P-value
3-month o	utcomes—adjusted fo	r baseline score		
PDA	N = 318	N = 368	12.58	< 0.001
	41.56 (1.84)	54.14 (1.71)	(7.58, 17.58)	
DDD	N = 318	N = 368	-1.92	0.029
	17.47 (0.64)	15.55 (0.60)	(-3.65, -0.19)	
LDQ	N = 296	N = 346	0.25	0.691
	10.42 (0.45)	10.67 (0.42)	(-0.96, 1.45)	
12-month	outcomes—adjusted j	for baseline score	•	
	Mean (SD)	Mean (SD)		
PDA	N = 285	N = 327	8.99	0.003
	43.73 (2.14)	52.72 (2.00)	(3.16, 14.83)	
DDD	N = 284	N = 326	-1.49	0.148
	16.42 (0.75)	14.93 (0.70)	(-3.52, 0.53)	
LDQ	N = 261	N = 302	0.92	0.184
	9.49 (0.51)	10.41 (0.47)	(-0.44, 2.28)	

Form 90I data were further combined with reported alcoholrelated problems (Alcohol Problems Questionnaire: APQ; Drummond, 1990) to derive a categorical measure of outcome at follow-up. This composite measure, as developed by Heather and Tebbutt (1989), consists of six categories: 'Abstinent'—no alcohol consumption during the assessment window (i.e. past 90 days); 'Non-problem drinking'—drinking within the window but with a score of zero on the APQ; 'Much improved'—drinking together with a positive APQ score but with a reduction on the APQ from baseline to follow-up of at least two-thirds; 'Somewhat improved' drinking but with a reduction in APO score of one-third or more but less than two-thirds; 'Same'-reduction in APQ score of less than one-third or an increase in APQ score of less than one-third; and 'Worse'-increase in APQ score of one-third or more.

Statistical analysis

All analyses were undertaken using SPSS version 13.0 for Windows. Prediction models for continuous outcome measures (DDD, PDA, LDQ) were developed using linear regression, with goal preference and the baseline value for each outcome measure entered as independent variables. While a DDD value cannot be calculated for clients who are totally abstinent during the follow-up period, we assigned a value of zero in these cases to reflect their non-drinking status,

following the precedent set by the Project MATCH Research Group (1997).

For the purpose of analysing outcome categories, the six categories described above were collapsed into two: successful outcome (abstinent/non-problem drinking) and problem drinking (all other categories including 'Much improved' and 'Somewhat improved'). Those attaining abstinence and non-problem drinking were also contrasted with one another as a second binary outcome measure. Chi square was used for both pairs of dichotomous outcome categories.

In order to examine the impact of known covariates of goal preference (Heather *et al.*, 2010) as potential moderators of any association between goal preference and outcome, the above analyses were repeated with goal preference entered into the regression equation along with the variables found to significantly covary with baseline goal: sex, DDD, PDA, detoxification, APQ, Important People and Activities Inventory (IPAI) social support and IPAI support for drinking. For categorical outcomes, logistic regression was used to control for these covariates.

RESULTS

Treatment outcome across the six categories as originally described by Heather and Tebbutt (1989) is displayed in Figure 1. Although not adopted as primary outcome categories for fuller analysis in this paper, it is worth noting that the apparent superiority of the non-abstinent goal for producing an outcome of somewhat improved or better versus not improved or worse at 12 months was not significant (59.8 vs 53.9%, chi square = 2.00, P = 0.157).

Goal abstainers were more likely to achieve a successful outcome (abstinence/non-problem drinking) than goal non-abstainers at 3 months, with a trend in the same direction remaining at 12 months (Table 1). Among those in the successful outcome category, the majority of those preferring abstinence achieved a successful outcome by abstaining while the majority of those preferring a non-abstinent goal achieved a successful outcome with non-problem drinking, with these relationships highly significant as shown in Table 1.

Outcomes for continuous variables by each goal preference at 3 and 12 months' follow-up are shown in Table 2. Goal preference groups did not significantly differ on LDQ score at either 3 or 12 months. For PDA, however, there was a significant effect at 3 and 12 months such that those preferring abstinence had a greater increase in abstinent days than those preferring non-abstinence. For DDD, those preferring absti-

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Table 3. Goal preference and outcome category, controlling for covariates^a of goal preference

Outcome	Odds ratio (abstinent goal: non-abstinent goal) ^a (95% CI)	P-value
3-month outcome—adjusted for covariates of	of goal choice ^a	
Successful outcome	1.74 (1.06, 2.84)	0.027
Abstinence (versus non-problem drinking)	2.20 (0.79, 6.09)	0.131
12-month outcome—adjusted for covariates	of goal choice ^a	
Successful outcome	1.42 (0.92, 2.21)	0.118
Abstinence (versus non-problem drinking)	2.51 (1.10, 5.72)	0.028

^aCovariates controlled for: sex, DDD, PDA, detoxification, APQ, IPAI social support and IPAI support for drinking.

nence had a significantly greater reduction at 3 but not at 12 months.

To examine the impact of known covariates of goal preference, the above analyses were repeated for those outcome variables for which a significant association or trend had been identified, with goal preference entered in the regression equation along with seven variables found to significantly covary with baseline goal (see above). Table 3 shows that a drinking goal of abstinence continued to predict successful outcome at 3 months but that the trend at 12 months ceased to be significant. There was no longer a significant association between drinking goal and type of successful outcome at 3 months, while the association at 12 months remained significant. Table 4 shows that drinking goal continued to be a strong predictor of PDA at 3 and 12 months. DDD was no longer predicted by goal preference at 3 or 12 months. Drinking goal preference remained unrelated to LDQ score.

DISCUSSION

In terms of the outcomes categories described by Heather and Tebbutt (1989), Figure 1 shows that clients initially choosing abstinence showed a higher proportion of successful outcomes

(abstinence or non-problem drinking) than those choosing non-abstinence. In the abstinence goal group, 22% reported a successful outcome at 3 months' follow-up and 30% did so at 12 months' follow-up, compared with 13 and 23% in the non-abstinence goal group. This difference between goal groups was significant at the 3-month follow-up point but just failed to reach significance at the 12-month point (Table 1).

The higher proportion of successful outcomes among the abstinence goal group in categorical terms was supported by significantly greater levels of percentage days abstinence at both 3 and 12 months' follow-up. The differences between groups on this measure remained highly significant at both follow-up points when baseline differences between the groups were controlled for in the analysis. On the other hand, the superiority for the abstinence goal group on DDD was significant only at 3 months' follow-up and only when covariates were not controlled for. Thus, it appears that the greater likelihood of successful outcome in the abstinence goal group may be primarily the result of reduced frequency of drinking rather than reduced drinking intensity.

A possible explanation for the superiority of overall outcome in the abstinence goal group is that they were more motivated to change drinking behaviour. Consistent with this is the finding reported in the companion paper (Heather *et al.*, 2010) that those preferring abstinence were more likely to be assessed as in the action stage of change. Items in the instrument upon which this assessment was based (the Readiness to Change Question [Treatment Version]) refer both to giving up/quitting drinking and to cutting down. Thus, it may be that clients preferring abstinence were more highly motivated to achieve their chosen goal than those preferring non-abstinence. From this point of view, it does not necessarily follow that the abstinence goal *per se* is associated with better outcome irrespective of level of motivation to change.

One possible interpretation of the lack of difference between the two goal groups for level of alcohol dependence, as measured by the LDQ, is that, although those choosing a goal of non-abstinence were drinking more on average at follow-up, both groups may nevertheless have been equally satisfied with the changes made to their drinking and may

Table 4. Goal preference and outcome: continuous measures, controlling for covariates^a of goal preference

Outcome	Non-abstinent goal Mean (SE)	Abstinent goal Mean (SE)	Difference (Non-abs – abs) Mean (95% CI)	<i>P</i> -value
3-month outcome—a	adjusted for baseline score and covariates	of goal choice ^a		_
PDA	N = 316 $45.33 (2.25)$	N = 357 $56.72 (1.82)$	11.39 (6.12, 16.66)	< 0.001
DDD	N = 316 $16.38 (0.80)$	N = 357 15.16 (0.65)	-1.23 (-3.10, 0.65)	0.199
LDQ	N = 294 10.91 (0.55)	N = 337 10.46 (0.44)	-0.45 (-1.74, 0.84)	0.497
12-month outcomes-	—adjusted for baseline score and covariat	es of goal choice ^a		
	Mean (SD)	Mean (SD)		
PDA	N = 284 $43.49 (2.59)$	N = 316 54.82 (2.14)	11.34 (5.17, 17.50)	< 0.001
DDD	N = 283 15.32 (0.94)	N = 316 14.12 (0.77)	-1.20 (-3.42, 1.03)	0.290
LDQ	N = 261 10.44 (0.62)	N = 293 10.14 (0.50)	-0.30 (-1.75, 1.15)	0.684

^aCovariates controlled for: sex, DDD, PDA, detoxification, APQ, IPAI social support and IPAI support for drinking.

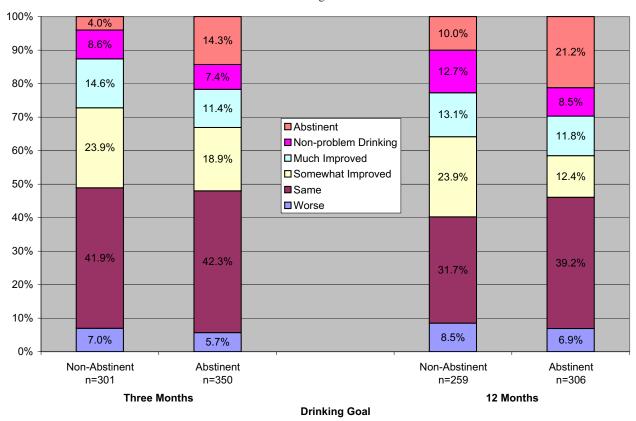


Figure 1. Goal preference and outcome category.

therefore have subjectively rated their level of dependence in equivalent terms; the overall reductions in LDQ are substantial (of a similar magnitude to PDA and DDD in terms of effect size) and are sustained. This is the predicted finding from a psychological understanding of dependence, as measured by LDQ, and suggests that both goal groups were able to make substantial detachments from a life dominated by drinking and show a broadening of daily activities. It follows from this that DDD should be similar in both groups, as was found, whereas PDA would be expected to be different for the two groups, as was also found.

The finding of higher rates of successful outcome among those choosing abstinence is more noteworthy because it was reported in the companion paper (Heather et al., 2010) that these clients showed more serious alcohol problems than those choosing non-abstinence on a range of variables. This higher severity included higher drinking intensity, greater likelihood of having been detoxified in the 2 weeks prior to assessment, more alcohol problems and greater mental and physical ill-health. It was shown by Adamson et al. (2009) that higher pre-treatment consumption and poorer mental health are consistent predictors of poorer outcome. It is perhaps surprising, therefore, that, although it was still present at the 3-month follow-up point, the superior outcome in question did not appear to increase when baseline variables reflecting differences between the two goal groups were controlled for in the analysis. However, the comparison of groups at baseline (Heather et al., 2010) also showed that the goal abstainers were actually less severe initially than the non-abstainers on percentage days abstinence. Since the greater probability of a successful outcome among the former was shown mainly in higher rates of total abstinence and proportions of abstinence days, it is less surprising that controlling for baseline differences did not increase this superiority.

Better outcome for those choosing abstinence as a goal has also been reported in other studies (Duckert, 1993; Sobell et al., 1995; Hodgins et al., 1997; Long et al., 1998), but differences in characteristics of treatment samples, how treatment goal was defined, when during the treatment process it was recorded, how outcome was measured and other methodological differences preclude a useful comparison with the present results. Adamson and Sellman (2001) divided non-abstinent goal clients into two groups—those aiming to drink within national drinking guidelines for New Zealand and those aiming to reduce but above the national guideline level. Those aiming to reduce but remain above guidelines had worse outcomes than abstainers while the outcomes for those aiming to drink within guidelines were equivalent to those achieved by those choosing abstinence. Unfortunately, a similar distinction is not possible in the present analysis because clients were not asked about their specific aims when stating their preference of drinking goal. Indeed, as noted by Heather et al. (2010), clients opting for non-abstinence in the present sample were almost certainly a heterogeneous group; they may well have included some who had no intention of drinking within recommended limits and were, therefore, unlikely to achieve a non-problem drinking outcome according to the criteria described by Heather and Tebbutt (1989) (cf. Long et al., 1998, p.302).

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A better outcome among clients choosing abstinence has not always been found (Booth et al., 1984, 1992; Ojehagen and Berglund, 1989), although it should be noted that Booth et al. (1984) had a sample too small (n = 27) to be able to interpret negative findings. But even if it is accepted, on the basis of present findings and those from previous research, that clients choosing abstinence are likely to show a better treatment outcome than those choosing a non-abstinent goal, it does not follow from this that all clients should be advised to abstain irrespective of their preferences or problem severity. It is possible that such advice might lead to resentment on the client's part and treatment dropout or, at least, impair the therapeutic relationship. It is also possible that if this policy were known before treatment entry, it might deter some clients from beginning treatment and render treatment less accessible to potential clients in general (Heather and Robertson, 1981; Humphreys and Tucker, 2002; Sobell and Sobell, 2006).

A second finding of interest is that, among those clients showing a successful outcome, initial preference for drinking goal was strongly associated with the type of successful outcome achieved. Thus, among those with a successful outcome, roughly two-thirds of those initially preferring abstinence reported abstinence at 3 months' follow-up, while just over two-thirds of those initially preferring non-abstinence reported non-problem drinking at follow-up. When baseline differences between the two goal groups were controlled for in the analysis, the association between initial goal and type of successful outcome remained significant at 12 months' follow-up. It seems that individuals in the two goal groups are equally good at selecting a goal that suits them, at least with regard to matching their short-term drinking expectations. Monahan and Finney (1996) and Miller et al. (1992a, 1992b) also reported that abstainers at follow-up were likely to have had an earlier goal of abstinence.

It should also be noted that, in the non-abstinence goal group, the proportion of successful outcomes in the non-problem drinking category decreased from 3 to 12 months' followup (from 68 to 56%) and the proportion achieving abstinence increased (from 32 to 44%, see Table 1), although non-problem drinking remained the more frequent outcome. A shift towards abstinence among clients initially choosing a moderation goal was reported by Hodgins et al. (1997). Over a longer term, Miller and colleagues (1992a, 1992b) reported a tendency for people who had earlier achieved non-problem drinking to gravitate to abstinence, perhaps because drinking had become less salient in the behavioural repertoire over time or possibly in response to lack of success in limiting intake on drinking occasions. On the other hand, inspection of Figure 1 shows that, if the two improved categories are aggregated with the successful outcome (either abstinence or non-problem drinking), those preferring non-abstinence increased from 52% at 3 months' follow-up to 60% at 12 months' follow-up, whereas those preferring abstinence remained roughly the same (52 and 54%). While this change was not statistically significant, it does suggest that, combined with the larger increase in good outcomes in the non-abstinence preference group than in the abstinence preference group (see Table 1), a learning effect may be occurring in the non-abstinence group leading to somewhat better outcomes over time.

More generally, the association between initial goal preference and type of successful outcome increases confidence in the validity of the goal preferences collected at the

screening stage in UKATT and reported in more detail in the companion paper (Heather et al., 2010). It was made clear in that paper that there were no data on whether or not these goals had been maintained throughout the treatment episode or whether they might have changed owing the influence of therapists. It now appears that, at least among those with a successful outcome at follow-up, the majority of these initial preferences were meaningful statements of intent that were likely to have been maintained during and after treatment. These observations differ from those reported by Elal-Lawrence et al. (1986) who found that clients' drinking goals at the beginning of treatment were unrelated to outcomes at 12 months' follow-up; in contrast, clients' goals at the end of treatment did predict what kind of successful outcome was achieved (Elal-Lawrence et al., 1987). The reasons for the difference from the present findings are not clear, although it is possible that we may have found a stronger association with outcome had we recorded goal preference at the completion of treatment.

The main limitations of this study have already been mentioned above and in the accompanying paper (Heather et al., 2010). UKATT was not designed to investigate the issue of drinking goals, and results of the analysis were not hypothesized. In addition, we have no data on whether or not clients' initial goals were adhered to by clients or therapists during or after treatment and, for this reason, our findings have no bearing on the relative effectiveness of, or indications for, treatment specifically directed at either abstinence or moderation goals. Neither do our findings bear directly on the question whether allowing clients a choice of drinking goal results in more effective treatment than imposing such goals upon them. As suggested originally by Hodgins and colleagues (1997), to answer this question would require a randomized controlled trial comparing the results of treatment in which clients are allowed a choice of abstinence or moderation with treatment in which drinking goals are predetermined by some rational and evidence-based criteria. We recommend that such a trial be carried out.

The present findings do, nevertheless, have implications for treatment policy. First, in view of the superior outcomes shown by those preferring abstinence as a goal, the findings show that clients who state a preference for abstinence should be confirmed and supported in that preference, irrespective of the severity of the alcohol problem or any other clinical feature.

In cases where the client is uncertain which goal to pursue and seeks advice on this, implications of our findings are more complex. It might be thought that they are consistent with the traditional view that the client should, in normal circumstances, be advised to abstain since that advice is more likely to result in a successful outcome. However, either because of differences between the treatment sites at which UKATT was carried out or differences between individual therapists at the same site, it is possible that clients experienced varying levels of support for a non-abstinent goal, differences that may have been present right from the pre-assessment screen when goal choice was discussed and identified. It is even possible that some therapists might actively have worked against participants' achievement of a non-abstinent goal, for example by undermining clients' self-efficacy regarding the attainment of their drinking goal. In addition, as noted above, the abstinence-preferring group

may have been more motivated to achieve their goal than those who opted for non-abstinence or were uncertain about which goal was better for them. These considerations, and possibly others, make it hazardous to interpret our findings as unequivocally supporting abstinence for those who are uncertain about their drinking goal. With the benefit of hindsight, it is unfortunate that the recording of goal preference at screening included only two options—abstinence or not; if we had also included a third category of 'unsure' or, at least, a rating of the degree of conviction with which the preferred goal was endorsed by the client, we could have compared outcomes among the uncertain group with those who were more sure that either abstinence or non-abstinence was the appropriate goal for them. Equally, it would have been valuable to have measured the degree of abstinence orientation of therapists and their willingness to adapt their treatment approach to fit the goal choice of their client. Future research on this topic would benefit from a more refined approach to the assessment of goal choice and the context in which treatment occurs.

In respect of a goal of non-abstinence (and the implied rejection of abstinence as a goal), the findings of the companion paper suggest that this preference is more likely to be shown by clients with less severe problems. Findings in the present paper further suggest that outcomes for these clients are certainly not disastrous but are associated rather with a substantial number of successful outcomes at the 12-month follow-up (23%) and some degree of improvement among the majority (60%) of those stating this preference (see Figure 1). There are circumstances in which any form of continued drinking is clearly contra-indicated (e.g. liver damage or other alcohol-related pathology, severe and enduring mental illness or major social dysfunction) and clients in this category should be strongly advised of this. In the absence of such contra-indications, however, our findings suggest that such clients could be supported in the pursuit of their goal, albeit with further firm advice on the limits for low-risk drinking. The provision of such support is not only consistent with the likelihood of an improved outcome but avoids the danger of alienating and demotivating these clients. Where a service user is considering a moderation goal, then this should be an informed rejection of abstinence and not simply taken as an easier option. If the practitioner judges abstinence to be the better goal, then it is prudent to build in a contingency plan so that if moderation fails abstinence will automatically become the goal. It will be important to agree what success or failure to achieve a moderation goal will look like.

As well as highlighting the positive outcomes that can be achieved by both 'goal abstainers' and 'goal non-abstainers', our findings indicate that goal preference is a fluid concept, with one-third of successful outcomes achieved in a way inconsistent with initial goal preference—goal abstainers achieving non-problem drinking and goal non-abstainers achieving abstinence. Changes in goal preference, in either direction, have been previously noted (Foy *et al.*, 1979; Ojehagen and Berglund, 1989; Duckert *et al.*, 1992; Hodgins *et al.*, 1997). Clinicians should be prepared to identify and support goal change as an unexceptional part of the treatment process that need not jeopardize good outcome.

In more general terms, our findings point to the need to include the client's personal drinking goals in assessment at treatment entry and as a basis for negotiation. As recom-

mended by Adamson and Sellman (2001): 'In all settings the importance of a negotiated treatment goal, recognizing the inevitability of patients exercising their own choice regardless of advice, should be noted' (p.358).

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