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# LEVEL OF IMPAIRED CONTROL PREDICTS OUTCOME OF MODERATION-ORIENTED TREATMENT FOR ALCOHOL PROBLEMS

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## ABSTRACT

**Aims** To examine the ability of the *Impaired Control Scale* (ICS) to predict outcome of moderation-oriented treatment for alcohol problems and to compare this predictive ability directly with that of a widely used measure of alcohol dependence, the *Severity of Alcohol Dependence Questionnaire* (SADQ).

**Design** Prospective follow-up study.

**Setting** Outpatient treatment centres.

**Participants** A combined sample 154 problem drinkers taking part in two clinical trials of *Moderation-oriented Cue Exposure* in the UK and Australia. Clients were followed up 6 (UK) and 8 (Australia) months after the end of treatment.

**Measurements** Outcome was categorised by combining drinking behaviour at follow-up with changes on the *Alcohol Problems Questionnaire* from before treatment to follow-up. Controlling for research site, baseline scores on Part 2 of the ICS (substitution method) and the SADQ-C were entered in logistic regression analyses with 3 outcome dichotomies as dependent variables.

**Findings** 5% of clients were abstinent at follow-up, 13% non-problem drinkers, 25% much improved, 24% somewhat improved and 34% unimproved. Location of treatment and ICS2 scores were significant predictors of whether or not clients achieved a successful outcome (abstinence or non-problem drinking). Using a cut-point of 25 on the ICS, two-thirds of outcomes were correctly classified as either treatment successes or failures. SADQ-C score was not a significant predictor of treatment outcome.

**Conclusions** The ICS predicts outcome of moderation-oriented treatment among moderately-dependent problem drinkers recruited mainly via newspaper advertisements. The ICS should replace the SADQ as the basis for advice to clients in this population of problem drinkers regarding whether or not a moderation goal of treatment should be pursued.

**KEYWORDS:** Alcohol problems/ Moderation-oriented treatment/ Controlled drinking/ Treatment outcome/ Outcome predictors

In summarising “the great debate” on the possibility of controlled drinking following alcohol dependence, Sobell and Sobell (1995) concluded that recoveries of individuals who have been severely dependent predominantly involve abstinence, while recoveries of those who have not been severely dependent predominantly involve reduced drinking. These conclusions are reflected in treatment agency policies in those countries in which the moderation goal has become an accepted part of treatment provision for alcohol problems.

In an early survey of British treatment agencies, Robertson and Heather (1982) found that the main criterion for determining to whom the offer of moderation training should be made was severity of alcohol dependence. Roughly 10 years later, Rosenberg and colleagues (1992) reported that those British treatment agencies regarding moderation as an acceptable goal rated severity of dependence as the most important factor in selecting this goal, followed by client attitudes and beliefs about moderation and abstinence, drinking history, results of liver function tests and social stability/ social relationships.

Among those treatment agencies in the USA surveyed by Rosenberg and Davis’ (1994) that found moderate drinking acceptable, “severity of physiological dependence” was rated the most important factor in the selection of drinking goal, followed by drinking history, psychological dependence, previous treatment, criminal behaviour and liver function test results.

Differences between the USA and UK in the acceptability of the moderation goal were discussed by Cox *et al.* (2004) in a study in which treatment providers in both

countries made treatment goal recommendations after reading hypothetical case-histories. Overall, moderation was recommended more strongly for clients with alcohol problems of ~~lower~~ ~~higher?~~ ~~Nick should nt this be lower?~~ severity, male clients and, unexpectedly, those with lower levels of social support.

Findings from these surveys concerned with criteria for selecting a moderation goal were based on respondents' clinical experience rather than research data. There is, however, empirical evidence to support the use of severity of alcohol dependence for this purpose. In a two-year follow-up of married male clients who had received abstinence-oriented treatment or advice, Orford, Oppenheimer and Edwards (1976) found that successful controlled drinkers had reported fewer dependence symptoms at intake than clients who had become successful abstainers and were more likely to have been diagnosed as "alpha alcoholics" rather than as "gamma alcoholics". In a 10-12 year follow-up of the same treatment cohort, Edwards *et al.* (1983) calculated that 7 out of 8 clients who had achieved "social drinking" showed a maximum degree of dependence ever experienced of less than 30 on the *Severity of Alcohol Dependence Questionnaire* (SADQ; Stockwell *et al.*, 1979).

Stockwell, Murphy and Hodgson (1983) state that the clinical value of the SADQ includes its use in deciding the recommended drinking goal of treatment. A score of 31 or higher on the 20-item SADQ correlated with a clinician's rating of severe dependence while a score of 30 or less correlated with rating of mild to moderate dependence. Ratings of degree of dependence have been shown to predict the likelihood of a successful abstinence or moderation outcome (Polich, Armor & Braiker, 1980), although other variables were also important. In a sample of Irish

problem drinkers, Meehan, Webb and Unwin (1985) confirmed the use of a cut-point of 31+ to distinguish severe from mild-moderate dependence, as validated against a clinician's rating of severity of dependence.

With regard to moderation-oriented treatment, two of the studies described by Miller and his colleagues (Miller & Joyce, 1979; Miller and Baca, 1983) found that lower severity of dependence at intake was predictive of a successful outcome. In a longer-term follow-up of clients who had received moderation-oriented treatment, Miller *et al.* (1992) found that both abstainers and treatment failures had been more impaired at intake than moderate drinkers and those drinkers who showed improvement in alcohol problems at follow-up.

The data reported in the present article come from two similar studies from the United Kingdom (Heather *et al.*, 2000) and from Australia (Dawe *et al.*, 2002) designed primarily as tests of a new treatment modality called *Moderation-oriented Cue Exposure* (MOCE). The main hypothesis tested was that MOCE would be superior in effectiveness to the conventional method of training problem drinkers to moderate their consumption known as *Behavioural Self-control Training* (BSCT: Hester & Miller, 1989). This hypothesis was not supported in either study. In addition, in the study by Heather *et al.* (2000), an interaction between treatment modality and level of dependence was hypothesised such that MOCE was predicted to be relatively more effective than BSCT at higher levels of dependence, using the conventional cut-point for this purpose of SADQ  $\geq 31$ . This hypothesis again was not supported but it was noted that, irrespective of type of treatment received, a subsample of clients above the SADQ cut-point at baseline showed outcomes as favourable as those initially below,

suggesting that this cut-point may not be the most valid indicator of the advisability of moderation training.

As well as the SADQ, both studies above included the *Impaired Control Scale* (ICS: Heather *et al.*, 1993), a measure of the degree of impaired control over drinking self-reported by a client. This instrument showed good evidence of reliability and validity in the study in which it was developed in Australia (Heather *et al.*, 1993), was subsequently cross-validated in an English sample of treatment attenders (Heather, Booth & Luce, 1998) and was demonstrated to have significant relationships with treatment outcome (Heather *et al.*, 1998). Good factor structure, reliability and validity of the ICS were independently confirmed by Marsh *et al.* (2002). Although clearly related to a general factor of alcohol dependence, impaired control as measured by the ICS can be seen as empirically distinct from it (see Heather *et al.*, 1993, p. 707).

The aim of the analysis reported here was to examine the ability of the ICS to predict outcome of moderation-oriented treatment for alcohol problems and to compare this predictive ability directly with that of a widely used measure of alcohol dependence, the SADQ.

## Method

### *Participants*

Participants in the present study had taken part in two similar randomised controlled trials of MOCE, one in the UK (Heather *et al.*, 2000) and the other in Australia (Dawe *et al.*, 2001). The effectiveness of MOCE was compared with that of BSCT at follow-up approximately 6 months after the termination of treatment in the UK and 8 months

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in Australia. In the UK trial, 39 clients in the MOCE group and 37 in the BSCT group were successfully followed up and could be allocated to an outcome category in the classification system developed by Heather and Tebbutt (1989). Applying the same criteria to the Australian subsample, there were 41 clients in the MOCE group and 37 in the BSCT group. This provided a combined sample of 154 cases for the present analysis.

Recruitment of clients to the UK project was roughly evenly divided between formal referral sources (mainly general medical practitioners) and self-referral via newspaper advertisements, while recruitment in the Australian project was confined to persons responding to announcements in the local media. Inclusion criteria for the two projects were similar and both required a stated preference for a goal of moderate drinking over total abstinence. However, in the Australian project a score of 15 or above on the Severity of Alcohol Dependence Questionnaire, Form-C (Stockwell *et al.*, 1994) was required, whereas no such stipulation was made in the UK study. Exclusion criteria (under 18 years of age; current psychotic disorder; medical condition precluding continued consumption of alcohol; pregnancy; medications contra-indicating alcohol consumption) were similar.

### *Treatments*

A detailed description of MOCE principles, methods and procedures is contained in a Therapists' Manual (Heather & Wales, unpublished) available from the first author on request and a shorter description is given by Dawe *et al.* (2002). BSCT was based on the methods described by Hester and Miller (1989). The mean number of treatment sessions attended was 7.1 (sd=4.0) for the UK study and 5.4 (sd=3.2) for the

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Australian study. There were no differences in attendance between treatment groups at either site. ~~In the UK study, the mean number of treatment sessions attended in the full sample was 7.1 (sd=4.0);~~

~~with means of 7.7 (sd=4.4) in the MOCE group and 6.6 (sd=3.5) in the BSCT group.~~

~~In the Australian study SHARON FILL IN HERE PLEASE.~~

In the UK study, both ~~t~~Therapists ~~in the UK study~~ were ~~two~~ experienced ~~male~~ clinicians, with training in either clinical psychology or psychiatric nursing.

Allocation of therapists to treatments was counter-balanced. In the Australian study, therapy was delivered by a clinical psychologist (SD) and two other psychologists registered in the state of New South Wales. Training and ongoing clinical supervision was provided by the authors for all other ~~therapists~~one a clinical psychologist and the other a psychiatric nurse, who received extensive training and supervision in the delivery of both MOCE and BSCT. In both trials, daily and weekly limits on drinking were individually negotiated between therapist and client but typically were in accordance with levels for low-risk drinking recommended by medical authorities in each country. ~~YES SHARON, WAS THIS TRUE IN THE AUSTRALIAN STUDY?~~ For the purposes of the present analysis, “moderate” or “non-problem” drinking was defined as drinking during the follow-up period but without self-reported problems.

### *Measures*

In addition to the usual socio-demographic information and drinking history, the following measures were taken in both studies:

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- a) Form 90 (Miller & del Boca, 1994) to provide a detailed record of alcohol consumption over the past 90 days at baseline and follow-up. In the UK study this was shortened to Form 60 to provide a record of drinking over the past 60 days but the same outcome measures (see below) were derived as in the Australian study. Form 90 or 60 was given at both baseline and follow-up.
- b) Severity of Alcohol Dependence Questionnaire-Community Version (SADQ-C; Stockwell *et al.*, 1994) – a revised version of the original SADQ more suitable for clients with relatively mild dependence. This was given at baseline.
- c) Alcohol Problems Questionnaire (APQ; Williams & Drummond, 1994) – a measure of alcohol-related problems, as distinct from signs of alcohol dependence, over the past 6 months. Only the 23 core items of the APQ are used in this analysis. The APQ was given at baseline and follow-up.
- d) Impaired Control Scale (ICS; Heather *et al.*, 1993). This consists of 3 parts measuring the degree to which the client has attempted to control drinking over the past 6 months (Part 1), the frequency with which (s)he has succeeded or failed in controlling drinking over the past 6 months (Part 2), and the degree to which (s)he believed that (s)he would be able to control drinking if it were attempted now. The instrument was scored by the “substitution method” (see Heather *et al.*, 1998), whereby items in Part 2 that the client had endorsed “Does not apply” were replaced by scores on the corresponding items in Part 3. This method was found by Heather *et al.* (1998) to result in improved indices of concurrent and predictive validity. The ICS was given at baseline.

The main outcome measures used in both trials of MOCE were Drinks per Drinking Day (DDD) and Percentage Days Abstinent (PDA) (Project MATCH Research Group, 1997). For the purposes of the present analysis, however, and in the interests of relevance to clinical practice, outcome is described by a classification scheme developed by Heather and Tebbutt (1989) that focuses primarily on changes in the extent of alcohol-related problems from baseline to follow-up. The categories making up this scheme are: Abstinent - no alcohol consumption during the assessment window (i.e., 60 or 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 – reduction in APQ score of one third or more but less than two-thirds; Unimproved – reduction in APQ score of less than one third or no change/ increase in APQ score at follow-up.

#### *Statistical analysis*

Standard units of alcohol recorded in the Australian study (unit = 10g ethanol) were first converted to UK standard units (= 8g) (Miller, Heather & Hall, 1991). The method used to test the ability of independent variables to predict treatment outcome was logistic regression analysis (LRA; SPSS Version 11.0 for Windows) using dichotomous classifications of outcome as dependent variables (see below).

Controlling for the effects of a possible confounding variable, level of impaired control as measured by the *Impaired Control Scale* and level of alcohol dependence as measured by the *Severity of Alcohol Dependence Questionnaire* were entered into the regression model in order to simulate the task of a clinician who wished to know

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which of these instruments could best predict outcome of treatment and therefore form the basis for advice to the client regarding appropriateness of a moderation goal.

## Results

### *Sample characteristics at baseline*

Table 1 provides data for client characteristics at baseline in the two subsamples and for the combined sample. To account for increased risk of Type 1 error due to multiple comparisons, an adjusted significance level of  $p < 0.01$  was used. - It will be seen that there were few various differences between the two subsamples. There were significantly- more participants ~~people~~ in full-time employment ~~ed~~ in the Australian subsample compared to those from the UK. ~~contained significantly more individuals who were in full-time employment than the UK subsample.~~ There was also a higher mean level of alcohol dependence at intake in the Australian sample, reflecting the requirement of a minimum score of 15 on the SADQ-C for entry to the Australian study. ~~It also showed a significantly higher mean level of alcohol dependence, probably because of the minimum level of dependence required for the study in Australia. The UK subsample included a higher proportion of male participants but this difference did not reach the 5% level of statistical significance. With regard to levels of impaired control at intake, mean score on Part 3 (beliefs about impaired control) was significantly higher in the UK subsample. There were no significant differences between subsamples on alcohol consumption variables or alcohol-related problems at baseline.~~

TABLE 1 ABOUT HERE

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*Treatment outcome*

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As shown in Table 2, outcome of treatment is classified using Heather and Tebbutt's (1989) classification scheme. When for both subsamples and the overall sample, despite the similar breakdown of clients into outcome categories in each subsample, the ~~if~~ abstinent and ~~non-problem drinking improved~~ categories were combined due to small cell sizes, ~~are combined to form a "successful" category,~~ there was a significant difference between the subsamples favouring somewhat better outcomes in the UK subsample ( $\chi^2(3) = 9.65, p < .05$ ) ~~This may be due to the longer follow-up period and/or the more extended follow-up window in the Australian trial.~~

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TABLE 2 ABOUT HERE

Table 3 shows alcohol consumption data for all 5 outcomes categories at baseline and follow-up.

TABLE 3 ABOUT HERE

For the purposes of the LRA, outcome categories were broken down into 3 dichotomous variables: (i) successful outcome (abstinent + non-problem drinking) versus the remainder; (ii) much improved or better versus the remainder; (iii) somewhat improved or better versus unimproved.

*Predictors of outcome*

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Eliminating 4 clients with missing data for ICS2 left a sample of 150 for the LRA. Research site (Australia vs. UK) was significantly correlated with outcome dichotomy 1 (abstainers + non-problem drinkers vs. the rest) ( $r = 0.22, p < 0.01$ ) and this variable was therefore added to SADQ and ICS baseline scores ~~and to control for the effects of this variable it was entered as a first step in the LRA. ICS Part 2 and SADQ scores were then~~ as an independent variable in regression models with each of the 3 outcome

dichotomies as dependent variables. Apart from ICS2, no baseline variable showed a significant or nearly significant first-order correlation with any of the outcome dichotomies.

Table 4 shows the results of the LRA with outcome dichotomy 1 as dependent variable. This shows that the strongest predictor of outcome was location, with those treated in the UK study more likely to fall into the abstinent/non-problem drinking category. Further, in addition to location, those who scored higher on the measure of impaired control at baseline were also more likely to have achieved an abstinent or non-problem outcome. It will be seen that the odds ratio favouring ICS2 score in Table (1.08) is low. ~~, after controlling for the effects of research site, ICS Part 2 is a significant predictor of outcome status and that SADQ score is not.~~ In the remaining two LRAs with outcome dichotomies 2 and 3 as dependent variables, neither ICS2 nor SADQ-C score was a significant predictor of outcome.

#### TABLE 4 ABOUT HERE

Inspection of the relationship between ICS2 scores at baseline and successful vs. unsuccessful outcome suggested that a cut-point of less than 25 on the former would be maximally efficient for a recommendation of the moderation goal. Table 5 shows the numbers and proportions of cases correctly and incorrectly classified by this cut-point and compares these figures with those derived from the traditional cut-point of less than 31 on the SADQ for the same recommendation. It may be deduced from Table 5 that, using the cut-points stipulated, ICS2 correctly classifies 66.7% of clients (61.5% of successful cases and 67.7% of unsuccessful cases) while SADQ correctly classifies 27.5% (75.0% of successful cases and 16.8% of unsuccessful cases).

Lowering the cut-point for the SADQ did not substantially improve the classification of outcomes.

TABLE 5 ABOUT HERE

### **Discussion**

The main finding from this analysis is that a client's score on Part 2 of the *Impaired Control Scale*, using the substitution method of calculation, is a significant predictor of successful outcome of moderation-oriented treatment for alcohol problems. Given that a score on the *Severity of Alcohol Dependence Questionnaire* was not a significant predictor, it follows that the ICS should replace the SADQ as the chief instrument of choice among the population of problem drinkers sampled here for predicting whether or not moderate drinking is likely to be successfully achieved. More specifically, clients with ICS2 scores of less than 25 should normally be advised to try to moderate their drinking. Since the only alternative to moderation is to aim for total abstinence, those with scores of 25 or above on ICS2 should normally be advised to abstain.

This should not be interpreted to mean, however, that clients with scores of 25 or above on the ICS will necessarily be able to achieve successful abstinence; the results of this analysis have no bearing on the prediction of outcome from abstinence-oriented treatment. In another study, Heather, Booth and Luce (1998) reported that ICS2 score was able to predict successful outcome among clients aiming at a goal of total abstinence, suggesting that higher scores on the ICS are associated with poorer outcomes from both abstinence-oriented and moderation-oriented treatment. Nevertheless, a conservative clinical policy would be to recommend abstinence to clients showing higher levels of impaired control at intake.



It might be queried why, in an analysis of predictors of moderation-oriented treatment, 8 abstainers were included in the successful outcome category (see Table 2). The phenomenon of sustained abstinence following moderation-oriented treatment has been noted previously in the literature (Rychtarik *et al.*, 1987; Miller *et al.*, 1992). On the other hand, most of the evidence for the existence of “controlled drinking” outcomes in the earlier literature came from studies of abstinence-oriented treatment (Heather & Robertson, 1981). Sobell and Sobell (1995) concluded that, “The association of outcome type and dependence severity appears to be independent of advice provided in treatment” (p.1149). While this may be to overstate the case, it is clear that clients frequently achieve an outcome differing from the goal of the treatment they received and this should no longer cause surprise. It is difficult to determine whether in the present case elements of moderation-oriented treatment were beneficial to clients in the attainment of abstinence but this is a possibility. In any event, it seems illogical to exclude clients from the successful outcome category merely because their successful outcome at follow-up differs from the goal originally pursued in treatment.

The strongest predictor of outcome from the LRA was research site location, with clients in the UK study doing slightly but significantly better than those in the Australian study. There are several possible reason for this difference: (i) the longer follow-up period in the Australian study; (ii) the longer window for recording alcohol consumption at follow-up in the Australian study; (iii) the higher number of treatment sessions attended in the UK study; (iv) although not significantly related to treatment outcome in this analysis, the higher mean level of dependence in the Australian sub-

sample. A combination of some or all these factors may have contributed to the effect observed.

It was noted that SADQ-C score was not a significant predictor of treatment outcome in this analysis. It does not follow from this, however, that the more general concept of alcohol dependence is irrelevant to treatment outcome or to the allocation of drinking goals. The notion of “loss of control” or, more recently, “impaired control” has always been a prominent aspect of conceptualisations of dependence (see Heather, 1991); the alcohol dependence syndrome was defined by Edwards *et al.* (1977) as “a disability marked by impaired capacity to control alcohol intake” (p.17). However, in the original development of the SADQ by Stockwell *et al.* (1979), it was decided for technical reasons not to attempt to measure impaired control and this was maintained in the later version of the SADQ (as opposed to the *Impaired Control Questionnaire* – see Stockwell *et al.*, 1994) used here. Thus the conclusion from this analysis might be that moderation-oriented treatment outcome is predicted by impaired control as measured by the ICS but not by other aspects of dependence as measured by the SADQ (i.e., tolerance, withdrawal, relief drinking, reinstatement of dependence).

It is interesting that impaired control was able to predict the dichotomy between successful outcome, comprised of abstinence and non-problem drinking, and the remainder of the follow-up sample but not the two dichotomies in which degrees of improvement (much improved or somewhat improved) were considered to be favourable outcomes. This is similar to an earlier finding reported by Heather *et al.* (1998). It suggests that level of impaired control before treatment is mainly relevant to whether or not a first episode of heavy drinking occurs in the follow-up period and

not to events thereafter possibly involving reinstatement of dependence or the “rule violation effect” (Parks, Anderson & Marlatt, 2001).

It was noted above that the prediction of successful outcome by ICS2 score gave an odds ratio of only 1.08. Thus, a cut-point of 25 on the ICS was able to classify only two-thirds of the follow-up sample as either success or failures. This suggests that other variables in addition to level of impaired control should be taken into account in the allocation of drinking goals in treatment. One prominent class of such variables concerns the client’s beliefs about the nature of one’s alcohol problem (Orford & Keddie, 1986) and, for example, whether maxims such as “one drink – one drunk” are believed to be true (Heather, Winton & Rollnick, 1982). In addition to circumstances where any form of continued drinking is clearly contra-indicated, the existence of prior periods of sustained moderation or abstinence, degree of social stability, marital status and a range of other variables may also be relevant (see Heather & Robertson, 1983; Rosenberg, 1993). Ultimately, drinking goal allocation is a clinical decision depending on the unique combination of attributes and beliefs of the individual client.

It can also be argued that allocation to abstinence or moderation goals should be primarily a matter of the client’s own choice and there is substantial evidence that many clients will choose the goal that best fits their circumstances (Pachman, Foy & van Erd, , 1978; Booth *et al.*, 1984, 1992; Hodgins *et al.* 1997; Adamson & Sellman, 2001). In other cases, however, the client will be uncertain about the choice of drinking goal and wish the therapist to offer advice or will choose a goal the therapist

considers unwise. In these cases, a score on the *Impaired Control Scale* may assist the therapist in offering advice in the client's best interests.

With regard to the generalisability of these findings, they strictly apply to the population of problem drinkers with a mean level of dependence in the mild to moderate range, who wish to aim for moderation as a solution to their alcohol problem and who are mainly recruited via newspaper advertisements and other media. It is possible that, for unknown reasons, level of impaired control may not be predictive of outcome among the corresponding population of problem drinkers seeking treatment at specialist alcohol agencies. It is possible too that the predictive ability of the ICS applies only in the UK, Australia and countries with a similar cultural background. Future research should investigate the predictive ability of the ICS in samples of problem drinkers suitable for a moderation goal and seeking treatment from specialist agencies and in other countries.

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**TABLE 1**

**Characteristics of combined sample and both subsamples at intake to treatment  
means and SD in parentheses**

| <u>Demographic Variables</u>                  | Combined sample<br>(n=154) | UK subsample<br>(n=76) | Australian subsample<br>(n=78) | <i>p</i> < |
|---|----------------------------|------------------------|--------------------------------|------------|
| Male<br>n (%)                                 | 102 (66)                   | 56 (74)                | 46 (59)                        | .10        |
| Age in years<br>mean (sd)                     | 42.3 (9.8)                 | 41.5 (9.0)             | 43.2 (10.6)                    | ns         |
| Married / cohabiting<br>n (%)                 | 64 (42)                    | 27 (36)                | 37 (47)                        | nsNS       |
| Full-time employment<br>n (%)                 | 98 (64)                    | 40 (53)                | 58 (75)                        | .01        |
| SADQ-C<br>mean (sd)                           | 21.4 (10.0)                | 18.5 (11.0)            | 24.2 (8.1)                     | .001       |
| Percent Days Abstinent<br>(PDA)<br>mean (sd)  | 20.8 (25.5)                | 19.6 (23.4)            | 22.0 (27.7)                    | nsNS       |
| Drinks per Drinking<br>Day (DDD)<br>mean (sd) | 17.5 (11.4)                | 19.0 (13.7)            | 16.0 (8.3)                     | nsNS       |
| APQ<br>mean (sd)                              | 9.9 (4.5)                  | 9.8 (4.9)              | 10.0 (4.1)                     | nsNS       |
| ICS Part 1<br>mean (sd)                       | 9.9 (4.3)                  | 9.8 (4.8)              | 10.1 (3.8)                     | nsNS       |
| ICS Part 2<br>mean (sd)                       | 25.4 (5.9)                 | 24.6 (6.6)             | 26.2 (5.1)                     | nsNS       |
| ICS Part 3<br>mean (sd)                       | 21.6 (6.4)                 | 22.7 (6.3)             | 20.4 (6.4)                     | .05        |

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**TABLE 2**

**Numbers and percentages in outcome categories in both subsamples and the overall sample**

| <u>Outcome category</u> | Combined sample (n=154) | UK subsample (n=76) | Australian subsample (n=78) |
|-------------------------|-------------------------|---------------------|-----------------------------|
| Abstinent               | 8 (5.2)                 | 6 (7.9)             | 2 (2.6)                     |
| Non-problem             | 20 (13.0)               | 15 (19.7)           | 5 (6.4)                     |
| Much improved           | 38 (24.7)               | 18 (23.7)           | 20 (25.6)                   |
| Somewhat improved       | 36 (23.4)               | 14 (18.4)           | 22 (28.2)                   |
| Unimproved              | 52 (33.8)               | 23 (30.3)           | 29 (37.2)                   |

**TABLE 3**

**Means (standard deviations) of Percent Days Abstinent (PDA) and Drinks per Drinking Day (DDD) for 5 outcome categories at baseline and follow-up**

| OUTCOME CATEGORY     | Baseline PDA   | Follow-up PDA  | Baseline DDD   | Follow-up DDD |
|----------------------|----------------|----------------|----------------|---------------|
| Abstinent            | 36.9<br>(33.2) | 100.0<br>(0.0) | 15.7<br>(8.4)  | 0.0<br>(0.0)  |
| Non-problem drinking | 28.3<br>(24.7) | 43.6<br>(29.1) | 17.1<br>(12.8) | 7.4<br>(3.8)  |
| Much improved        | 21.8<br>(24.7) | 32.7<br>(25.9) | 16.4<br>(12.0) | 8.4<br>(7.0)  |
| Somewhat improved    | 18.6<br>(27.1) | 27.1<br>(28.5) | 19.2<br>(10.6) | 10.3<br>(6.4) |
| Unimproved           | 16.0<br>(23.4) | 23.1<br>(23.1) | 17.5<br>(11.4) | 13.6<br>(9.2) |

**TABLE 4**

**Parameter estimates for logistic regression model relating outcome (abstinent/non-problem drinker vs. others) to location (UK/Australia), Severity of Alcohol Dependence Questionnaire and Impaired Control Scale scores at baseline**

| Variables          | Wald<br>$\chi^2$ | <i>B</i> | SE   | Odds ratio | CI        |
|--------------------|------------------|----------|------|------------|-----------|
| Location (UK/Aust) | 6.085            | 1.235*   | .501 | 3.44       | 1.23-9.18 |
| SADQ               | .594             | -.018    | .023 | .98        | .94-1.03  |
| ICS2               | 3.859            | .073*    | .037 | 1.08       | 1.00-1.16 |

\**p*<.05

**Outcome of treatment**

|            | successful | unsuccessful |
|------------|------------|--------------|
| ics2 < 25  | 16 (61.5%) | 40 (32.3%)   |
| ics2 >= 25 | 10 (38.5%) | 84 (67.7%)   |
| sadq < 31  | 21 (75.0%) | 104 (83.2%)  |
| sadq >= 31 | 7 (25.0%)  | 21 (16.8%)   |

**TABLE 5**

**Classification of successful vs. unsuccessful outcomes according to cut-points on the Impaired Control Scale and the Severity of Alcohol Dependence Questionnaire**

**~~TABLE 5~~**

**~~CLASSIFICATION OF SUCCESSFUL VS. UNSUCCESSFUL OUTCOMES  
ACCORDING TO CUT-POINTS ON THE IMPAIRED CONTROL SCALE AND  
THE SEVERITY OF ALCOHOL DEPENDENCE QUESTIONNAIRE~~**

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