Explaining abstinence rates following treatment for alcohol abuse: a quantitative synthesis of patient, research design and treatment effects

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Authors' objectives
To examine the relationships of treatment, patient and research design characteristics to treatment outcome (i.e. abstinence rates) following treatment for alcohol abuse.

Searching
The authors state that the studies used in this review were drawn from a larger review (339 studies) of alcoholism treatment outcome studies that were published in English between 1980-1992. The studies in the previous review were identified using MEDLINE, PsycLIT, PsycINFO, ETOH, and Dissertation Abstracts, as well as by checking the reference lists of review articles and primary studies published after 1980.

Study selection
Study designs of evaluations included in the review
Studies included multiple-group, comparative studies; multiple-group non-comparative studies (studies that did not use randomisation, matching or statistical adjustments for patient pre-treatment differences); and single-group studies. Studies were included if they:

1. Reported treatment group outcome in terms of abstinence.
2. Had a minimum follow-up point of at least 3 months.
3. Reported data on patients' marital and/or employment status.

Specific interventions included in the review
Treatment for alcohol abuse focusing on five characteristics of treatment:

1. Treatment goal.
2. Treatment intensity (inpatient, residential, day hospital or halfway house setting was high-intensity treatment, as was treatment that included an inpatient component of 2 weeks or longer, and outpatient settings other than days clinics provided low-intensity treatment).
3. Presence of behavioural treatment techniques (aversion therapy, covert sensitisation, behaviour contracting, behavioural marital therapy, community reinforcement therapy, relapse prevention, cognitive therapy, self-control training, social skills training, stress management training, relaxation training, assertion training, systematic desensitisation).
4. Availability of disulfiram and other antidipsotropic medications.
5. Involvement of family members or significant others in treatment.

Seventy-four percent (74%) of the treatment conditions took place in a high-intensity setting. Antidipsotropics were available in 9% of the treatment conditions. Follow-up ranged from 5 to 96 months and averaged 10.6 months.

Participants included in the review
Participants being treated for alcoholism. Approximately 60% of the participants were employed and/or married.

Outcomes assessed in the review
The proportion of abstinent patients taken at the first follow-up point of 3 months or longer.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.

Assessment of study quality
The authors state that they used a preliminary index developed by Morley (see Other Publications of Related Interest) to judge methodological quality and found that the included studies were of significantly higher quality than those that were excluded. The authors do not state how the papers were assessed for quality, or how many of the authors performed the quality assessment.

Data extraction
The authors assessed the reliability of coding by double-coding a randomly drawn set of 26 studies. Correlations were computed for the interval-level variables of proportion abstinent, proportion non-problem drinkers, proportion socially stable, follow-up interval, and follow-up rate. Correlations between original coding and reliability coding ranged from 0.90 to 0.96. Percentage of agreement was computed for the dichotomous variables and ranged between 75% to more than 95%.

The treatment condition rather than the study was the unit of analysis.

Methods of synthesis
How were the studies combined?
The authors conducted a quantitative synthesis of treatment outcome findings using multi-variate analysis (ordinary least squares regression) to examine patient social stability, research design characteristics and treatment elements.

How were differences between studies investigated?
The authors computed chi-squared statistics to determine whether the study selection criteria systematically selected certain types of studies.

The authors also assessed the possible effects of non-independent cases by comparing the results of analyses of the total sample of treatment conditions (150) with those of a smaller set of independent cases (100) that included all single-group studies and one randomly selected treatment condition from each multiple-group study.

The authors analysed the data using regression weighted by the number of participants in each treatment condition to check any differences between the unweighted analysis, but found no statistically significant differences.

Additional analyses were performed to investigate the influence of private, for-profit treatment programmes versus public or non-profit treatment programmes or unidentified treatment programmes.

The possibility of using a measure of drinking-related outcome other than abstinence rate was explored but was not feasible due to a lack of statistical power to detect significant effects.

Results of the review
One hundred (100) studies met the inclusion criteria with 150 treatment conditions for analysis. There were 27,407 participants in the 150 treatment conditions. Treatment groups ranged in size from 9 to more than 8,000 participants. The average number of participants in each group was 183.

The analyses indicated that a disproportionate number of studies of high-intensity treatment compared with lower-intensity treatment were selected (chi-square = 45.51, df = 1, p < 0.0001).

The analyses indicated that a disproportionate number of studies conducted by non-university-affiliated researchers
compared with university-affiliated researchers were selected (chi-square = 9.14, df = 1, p < 0.01).

The analyses indicated that a disproportionate number of studies that included family involvement were selected (chi-square = 4.11).

The analyses indicated that a disproportionate number of studies that included criteria to exclude more impaired subjects were selected (chi-square = 4.00).

Mean proportion abstinent was 42.9% (all cases) versus 43.9% (randomly drawn, independent cases).

The social stability index was entered into the multivariate analysis first and explained 4% of the variance in abstinence rates. Research design was added second and explained variance increased to 17% (F change = 5.56, p = 0.0003). Treatment characteristics were added last and explained variance increased to 34% (F change = 7.49, p < 0.001).

Treatment success rate was highly correlated with abstinence rate. The results of the multivariate analysis of success rate differed in only one respect from the analyses of abstinence rates: treatment conditions that used behavioural elements reported significantly higher success rates (about 7 percentage points) at follow-up (B = 7.2, SE =3.5, t = 2.04, p < 0.05) than did conditions not including behavioural elements.

In the analysis of potential interactions between social stability and each of the five treatment characteristics, none of the product terms was a significant predictor of abstinence rates.

**Authors' conclusions**

The present quantitative synthesis revealed some surprising findings, most notably that more intensive treatment had better outcomes than less intensive treatments.

**CRD commentary**

The authors clearly state the research question and have listed inclusion and exclusion criteria for the review. However, studies were identified from a previous review without mention of update searches and do not state the keywords used. The literature search was restricted to English-language publications so it is possible that additional relevant studies may have been missed.

The authors did not report how the articles were selected and although an assessment of study quality is referred to, the results are not reported. There is also no report as to who, or how many of the reviewers, selected the articles and extracted the data. The initial studies are not reported in the review.

The studies were combined in a statistical analysis using appropriate methods. The authors tested for homogeneity between the treatment groups and used multiple regression techniques to investigate the effects of the differences found. Although heterogeneity was investigated in detail in the statistical analyses, it was unclear whether it was appropriate to combine the data because of the differences found between studies, the possible selection bias in the review and the lack of quality assessment of the included individual studies. For these reasons, the results of the review should be viewed with caution.

**Implications of the review for practice and research**

Practice: The authors do not state any implications for practice.

Research: The authors state that future primary studies can determine whether differences in treatment intensity of the magnitude examined in this review are linked to differences in abstinence rates and other outcome variables.

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