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► **Cognitive-behavioral treatment with adult alcohol and illicit drug users: a meta-analysis of randomized controlled trials.**

Magill M., Ray L.A. [Request reprint](#)

Journal of Studies on Alcohol and Drugs: 2009, 70, 516–527.

Cognitive-behavioural therapies are among the most widespread and influential approaches to substance use, yet this analysis found they conferred just a small advantage over other therapies. Perhaps other features are more important than the therapeutic 'brand'.

Abstract Cognitive-behavioural treatment models are among the most extensively evaluated interventions for alcohol or illicit drug use disorders, yet this body of work has not been synthesised using meta-analytic techniques since 1999. This analysis aimed to update earlier analyses by synthesising results from randomised controlled trials of cognitive-behavioural treatment for adults diagnosed with alcohol or illicit drug use disorders, and to extend these analyses by identifying client or treatment factors which predict the magnitude of the treatment's impact. 52 studies published in English between 1980 and 2006 were found, involving 9308 individuals. Most were conducted in the USA. 80% enrolled only individuals diagnosed as dependent on alcohol or other drugs. About two thirds did not exclude people with psychiatric problems. Nearly all used manual-guided programmes. An effect size was calculated for each study to provide a common metric for expressing the strength of impact of the interventions.

Most of the studies compared cognitive-behavioural therapies against treatment as usual, many against other specific therapies, and a few against no treatment. Another few tested cognitive-behavioural therapies as an add-on treatment. Across all these studies, cognitive-behavioural therapies improved substance use outcomes by a small but statistically significant degree. The size of this effect meant that with cognitive-behavioural therapy, another 8% of people would do better than the typical person in the comparison group whose treatment did not include cognitive-behavioural therapy. However, there was significant variation in impact across the studies.


As expected, the therapy's effectiveness was thrown in to sharpest relief when compared to no treatment. The large effect size across these studies meant that another 29% of people had better substance use outcomes than the typical non-treated individual in the comparison group. Once again however, there was significant variation in impact across the studies. In contrast, there was a consistent but much smaller improvement in outcomes when the comparison group received either treatment as usual, or another specific therapy.

Contradicting conclusions reached by other analysts, there was no evidence that the benefits of cognitive-behavioural therapies persisted and/or grew over time more than those from other approaches. Impacts registered in studies with post-treatment follow-ups were slightly lower than the overall impact, and the relative benefits of cognitive-behavioural therapies diminished between 6–9 months after treatment and 12 months.

Across the six studies where the main problem drug was cannabis, cognitive-behavioural therapies had a consistent moderate impact which was larger than the all-drugs average. This meant that instead of (as across all the studies) another 8% of people doing better than typical for the comparison group, in the cannabis studies the figure was 19%. Impacts remained significant and consistent but small for alcohol studies, variable and small when the problem drugs were either stimulants or opiates, but became insignificant when the participants used multiple drugs.

Among the more detailed findings were that no overall advantage was gained when cognitive-behavioural therapy was an add-on to **another treatment programme**. Whether therapy was delivered in an individual or group format, or as part of the initial treatment or as aftercare, made no significant difference to its effectiveness. There was a larger impact when the therapy supplemented other psychosocial therapies than when it supplemented medication-based treatment, but this finding was too dependent on the particular studies included in the analysis to be considered a generalisable principle. The relative benefit of cognitive-behavioural therapies was unaffected by the age of the participants or whether they suffered from mental illness, but was stronger the more women were included in the samples – possibly an artefact of **other features** of the studies. Cognitive-behavioural programmes with fewer sessions tended to have greater benefits, but this might have been because the more extended programmes were compared against stronger alternative treatments. Even when these and other features of the studies had been taken in to account, there remained significant variation in the extent to which cognitive-behavioural therapies improved substance use outcomes.

The analysts concluded that cognitive-behavioural therapies had demonstrated their utility across a large and diverse sample of studies and for different types of substance use dependencies, and had done so under rigorous conditions for establishing efficacy, including comparisons with other active treatments. Effects were strongest among cannabis users and might also have been larger with women, when the therapies were relatively brief, and combined with another psychosocial therapy rather than medication. Group-based delivery was no less effective than individual.

 **FINDINGS** [Cognitive-behavioural approaches](#) are perhaps the world's most commonly used and widely researched formal psychological therapies, applied often with good results to a range of psychological problems. For substance use too, these therapies have an impressive research record (for example for [problem drinking](#)), but this is partly because more good quality studies have been done than in respect of competing approaches.

Despite its prominence, theoretical pedigree, and an extensive research effort which has

refined the therapy in to expert manuals (for example, [1 2](#)), the featured analysis indicates that overall the advantage conferred by cognitive-behavioural therapies over the alternatives is minor. That verdict is all the more disappointing since in many cases the [alternatives](#) seemed weak and/or not designed to be therapeutic. It is by no means clear that cognitive-behavioural therapies are more effective than other similarly extensive and coherent approaches. Studies which directly tested this proposition often found little or no difference, even when the competing therapy amounted simply to well structured medical care ([1 2](#)). Reviewers too have broadly reached this conclusion in respect of the use of [substances in general](#), cannabis in particular ([1 2](#)), [methamphetamine](#), and these and other [stimulants](#), including cocaine. In respect of [alcohol problems](#), a recent analysis has concluded that any differences between outcomes from psychosocial therapies are likely to have been due to chance or the allegiance of the researchers.

In the featured analysis, only with respect to cannabis use studies did cognitive-behavioural approaches record a major advantage. But of these six studies, three included no-treatment control groups, and when there was a comparison treatment, often it was much briefer than the cognitive-behavioural therapy, or in one case, deliberately non-interventionist. Greater impact across these studies might simply have reflected the relative weakness of the comparators.

Findings of little difference between outcomes from different therapies fit with the discovery that, despite in theory working through very different psychological processes, [in practice](#) cognitive-behavioural and other therapies create change through similar mechanisms. Studies have [rarely confirmed](#) that the theoretical mechanisms behind cognitive-behavioural therapies actually were responsible for substance use outcomes. Such findings direct attention away from the 'brand' of the therapy to 'common factors' which cut across different therapies, such as entering a setting within which the patient expects to be helped to get better, the credibility of the therapy to both patient and therapist, its ability to (for that patient) make ordered sense of the patient's 'disorder', in doing so to structure a route out of that disorder which generates optimism, its ability to provide a platform for engaging the client in their recovery, and the therapist's ability to create a supportive environment which facilitates these processes. Perhaps the greatest common factor lies in the [patients and clients](#). Typically they have reached the point where they desperately want to get better, have realised they need help to do so, and have decided to follow a culturally sanctioned route to gaining that help – formal treatment.

Beyond the type of therapy, promising routes to improving outcomes include focusing on the interpersonal style of the therapist, including the degree to which they exercise discretion and flexibility, and dimensions of the therapies such their degree of structure, directiveness, focus on emotional content, emphasis on engineering social support, and how far these match the personality and needs of the patient. In turn, common factors and therapeutic dimensions are nurtured or obstructed by the service's [organisational climate](#) and [the quality of its procedures](#). In turn these features are nested within the wider regulatory and professional environment. See these earlier Findings analyses for more on common factors ([1](#)), therapeutic styles and cross-cutting features of therapies ([1 2 3 4 5 6 7](#)), organisational climate ([1](#)) and procedures ([1 2 3 4 5 6 7 8](#)), and the

wider environment (1 2).

Where cognitive-behavioural approaches sometimes have scored better than alternatives is in the persistence of their effects. Gains relative to other therapies have been found to emerge only after the end of therapy and to grow over the follow-up period. This has been observed for some [psychological problems](#), for cocaine use problems (1 2), and recently in respect of [cannabis](#) dependence. The featured analysis seems to contradict this impression, but its finding of diminishing returns in the year after treatment reflects results from different sets of studies at the different time periods. Other ways the studies differed might account for this apparent waning. More convincing are results from different time points within the same study.

Recent [national guidance](#) from Britain's National Institute for Health and Clinical Excellence (NICE) recommended against cognitive-behavioural therapy as a routine treatment for drug problems, suggesting its main role was in tackling accompanying depression and anxiety. However, the analyses on which this was based did not show that cognitive-behavioural therapy was *ineffective*, just that it was not convincingly *more* effective than other well structured therapies. If this is the case, then the decision between such therapies can safely be taken on the grounds of what makes most sense to patient and therapist, the therapist's training, availability, and cost. In respect of cost and availability, cognitive-behavioural therapy may (more evidence is needed) prove to have two important advantages. The first is that effects may persist and even amplify without having to continue in therapy. The second is that it lends itself to manualisation to the point where it [can be packaged](#) as an interactive computer program and made available in services lacking trained therapists – potentially a crucial advantage for widespread implementation. In the UK implementation has been held back by the shortage of therapists, an obstacle currently being addressed by a government-funded training initiative.

Thanks for their comments on this entry in draft to Molly Magill of the Center for Alcohol and Addiction Studies at Brown University in the USA. Commentators bear no responsibility for the text including the interpretations and any remaining errors.

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