Evidence-based psychosocial treatments for adolescent substance abuse

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CRD summary
This review evaluated psychosocial treatments for adolescent substance abuse. The authors concluded that family therapies, group cognitive behavioural therapy and others showed promising results, although there was no evidence to suggest the superiority of any particular intervention. The absence of reported review methods and some spurious presentation of results meant that the reliability of the authors conclusions was unclear.

Authors' objectives
To evaluate outpatient psychosocial treatments for adolescent substance abuse.

Searching
English language articles published since 1998 were sought from the electronic databases PsycINFO, MEDLINE and Psychological Abstracts. Manual searches of reference lists and relevant reviews were scanned. Contact with investigators for unpublished material conducted since 1998 was carried out. Search terms were reported.

Study selection
Randomised controlled trials (RCTs) evaluating two or more outpatient treatments for substance abuse involving alcohol or other illicit drugs in adolescents aged between 12 and 19 years, and using a clearly defined substance use measure, were eligible for inclusion in the review. Community-based interventions and smoking or tobacco-focused interventions were excluded. The majority of included participants were male. A range of family-therapy (FT) interventions were included (involving 46 distinct treatments), for example Brief Strategic Family Therapy (BSFT), Functional Family Therapy (FFT), Multidimensional Family Therapy (MDFT), Multi-Systemic Therapy (MST), Behavioural Family Therapy (BFT), Integrative Behavioural Family Therapy (IBFT), Transitional Family Therapy (TFT), and Strength Oriented Family Therapy (SOFT). Several variations of individual and group Cognitive Behavioural Therapy (CBT) interventions (CBT-I and CBT-G) were evaluated in combination with Movement Enhancement Therapy (MET), the Adolescent Community Reinforcement Approach (ACRA), the Seven Challenges (7C), and the Minnesota Model 12-step intervention. Approximately half of the included studies used usual care (or minimal treatment) as the comparator. Outcome measures included urine testing, self report, Global Appraisal of Individual Needs, Addiction Severity Index, collateral reports and timeline followback (precentage days use). The authors stated neither how the papers were selected for the review nor how many reviewers performed the selection.

Assessment of study quality
The authors included only studies that met criteria specified as Type 1 and 2 studies by Nathan and Gorman (2002). Type 1 studies were those with adequate randomisation, blinding, clear inclusion and exclusion criteria, strong outcome measurement, sufficient study power and follow up and description of statistical methods. Type 2 studies were those with some aspects missing, but not considered to be fatally flawed. The authors did not state how the validity assessment was performed.

Data extraction
Data were extracted in order to calculate a pre- to post-treatment effect size. Standardised measures were calculated for within-group and between-group changes. Data were imputed where a follow-up assessment was not available. The authors stated neither how the data were extracted for the review nor how many reviewers performed the data extraction.

Methods of synthesis
Data were synthesised in a random-effects meta analysis within a hierarchical linear modelling (HLM) approach to compare the effect sizes from four treatment groups (minimal treatment control versus three active treatments: CBT-I; CBT-G; and family therapy). Treatments were classified as well-established or probably efficacious according to Chambless et al (1996). Heterogeneity was explored using the X² test and in sensitivity analyses.
Results of the review
Seventeen RCTs (n reported as 2,712 in table and 2,302 in the text) including 46 treatment comparisons were included in the meta-analysis. The majority of included studies were considered to be Type 1 quality.

The results of individual treatments were presented in the paper. Other studies were reported without data in addition to the studies included in the meta-analysis. The authors suggested that there was well-established evidence in favour of MDFT, MST, FFT, CBT-G, and CBT-I, and that BSFT, BFT were probably efficacious. Promising support was identified for the Minnesota 12-step approach, TFT and SOFT.

Pooled results showed that there was a statistically significant reduction in drug use arising from the minimal treatment control group, effect size 0.19 (p<0.05). Pooled results of the three active treatments (CBT-I; CBT-G, and family therapy) compared with the minimal treatment control showed that mean effect size for the active interventions was significantly higher at 0.45 (p<0.01). This was specifically in terms of marijuana use. There was statistically significant heterogeneity (p<0.005). This was largely among studies of CBT-G and could not be explained by demographic variables alone.

Sensitivity analysis failed to identify any significant differences between the active treatment groups. A discussion of potential treatment mediators and moderators was presented in the paper.

Cost information
The authors commented on two studies for which cost data was available, noting that CBT-G was more cost-effective than most other efficacious treatments.

Authors' conclusions
MDFT, FFT and CBT-G were well-established interventions for adolescent substance abuse treatment. MST, BSFT and BFT were probably efficacious. None of the treatment approaches was clearly superior to any others.

CRD commentary
The review question was clear and supported by well-defined inclusion criteria. The search strategy appeared to cover some relevant sources and attempts were made to minimise publication bias. The restriction to English language articles meant that language bias could not be ruled out and relevant studies may have been missed. Study quality was assessed using appropriate criteria for the included study designs. The major limitation of this review was the absence of reporting in terms of review methods, since it was unclear to what extent the authors attempted to control for errors and bias in the processes of study selection, data extraction and validity assessment. The presentation of results was confusing in places, as additional studies were included in the narrative synthesis for which there was no corresponding data. Details of studies included in the meta-analysis were clearly presented. It appeared that an appropriate synthesis method was used. Together with the methodological limitations identified above, the authors' conclusions did not exactly reflect the evidence presented. Therefore, the extent to which the conclusions were reliable was unclear.

Implications of the review for practice and research
Practice: the authors stated that clinicians had no other option than to select from the well-established treatment options, using their judgement based on individual suitability and staffing resources.

Research: the authors stated that further research was required to address tailoring of interventions to different subgroups and levels of substance use, focusing on the mechanisms of change associated with treatment effectiveness. Increased attention should be given to adolescent motivation and engagement techniques, and on the client-therapist interaction within the therapy process.

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