Psychological and psychosocial interventions for cannabis cessation in adults: a systematic review short report

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Disclaimer: this report contains language that may offend some readers.

Scientific summary

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Background

Cannabis is the most commonly used illicit drug worldwide. Chronic cannabis use is often defined as use on most days over a period of years. Cannabis dependence can develop from chronic use and is defined as impaired control over use and difficulty in ceasing use. Cannabis dependence is a recognised psychiatric diagnosis, often diagnosed via the *Diagnostic and Statistical Manual of Mental Disorders* criteria and the *International Classification of Diseases*, 10th Revision. Cannabis use is associated with an increased risk of medical and psychological problems. Research has looked into evaluating the use of a wide variety of psychological and psychosocial interventions, such as motivational interviewing (MI), cognitive–behavioural therapy (CBT) and contingency management.

Objectives

To systematically review the evidence for the clinical effectiveness of psychological and psychosocial interventions for cannabis cessation in adults who use cannabis regularly, in the form of a Health Technology Assessment (HTA) short report.

Methods

The systematic review included randomised controlled trials (RCTs) evaluating any psychological or psychosocial intervention for cannabis reduction or cessation in adult regular users. Studies of drug treatment (as intervention or comparator) were excluded. Studies were included if they involved all or mostly adult participants ($\geq$ 18 years). Studies involving users of a range of drugs were included if they reported cannabis-related outcomes for the subgroup of regular cannabis users. Studies were excluded if they were based within the criminal justice system or within inpatient or emergency department settings or if the intervention was provided to partners/parents rather than the cannabis user. RCTs were identified through literature searching of 11 databases in February 2014 and from existing studies and reviews. Data were extracted by one researcher and checked by a second. Risk of bias was assessed using an adapted version of Cochrane risk of bias assessment criteria. Narrative synthesis was used to analyse results, subgrouped by intervention and comparator. Meta-analysis was not undertaken owing to heterogeneity in interventions, comparators, outcomes and follow-up periods. Key outcomes included change in cannabis use, severity of cannabis dependence, motivation to change and adherence to or attendance at the intervention. Patient and public involvement (service user input) was used to refine the protocol (research priorities and factors around implementation) and elements of the report (e.g. *Plain English summary*).

Results

The review included 33 RCTs conducted in a range of countries: the USA (13 studies), Australia (7), Germany (3), Brazil (2), Canada (2), Switzerland (2), Denmark (1), Ireland (1) and multicountry (2). The mean participant age was 29 years.

General population studies

Twenty-six studies assessed the general population of cannabis users (7643 randomised participants). Participants responded to advertisements in 16 studies and were referred for treatment in four studies, whereas four studies used advertisements and referrals (not reported in two). Participants in 13 studies were classed as having high baseline use/dependence and in 10 as low use (not reported in three). Risk of bias was assessed as high in 18 studies and unclear in eight studies.

Six general population studies compared CBT (4–14 sessions) with wait list. CBT appeared significantly better than wait list post treatment (in all five studies with data) on most outcomes (cannabis use, severity of dependence, cannabis problems). Improved outcomes for CBT (6 sessions) over wait list were maintained at 9 months post baseline in the one study reporting later follow-up. Four studies comparing CBT (6–14 sessions) against shorter MI or motivational enhancement therapy (MET) (1–4 sessions) gave mixed results, with two studies showing better results for CBT on most outcomes post treatment and at 9–16 months, whereas two further studies showed few between-group differences. Both CBT and MI gave significant improvements from baseline (three studies with data). One small study reported that supportive–expressive dynamic psychotherapy (16 sessions) improved abstinence rates and symptom severity post treatment significantly more than one-session MI. In addition, one study of CBT compared with a social support group (10 sessions each) and another study of CBT compared with case management (nine sessions each) both showed no significant differences between groups but all groups significantly improved from baseline with changes maintained at 14–15 months. Three studies (one each) assessed telephone-delivered CBT, internet-delivered CBT and internet counselling; all showed significant improvements over wait list or education control on some outcomes (varied by study) post treatment and at 3 months. Effect sizes from one study for post-treatment cannabis use outcomes were 0.4 to 1.1 (CBT vs. wait list), 0.4 to 0.5 (CBT vs. brief MI) and 0.3 to 0.6 (brief MI vs. wait list), and for severity of dependence were 0.9 (CBT vs. wait list), 0.4 to 0.5 (CBT vs. brief MI) and 0.3 (brief MI vs. wait list).

Ten general population studies assessing brief MI/MET (one or two sessions) compared with wait list or assessment only (AO) gave mixed results. MI appeared significantly better than wait list/AO on some outcomes but not others (cannabis use and dependence in most studies; cannabis problems in one study), both post treatment (in all five studies with data) and at 3–9 months (in all seven studies). Similar results were seen for three studies comparing brief MI against education controls.

Five general population studies assessed contingency management (monetary vouchers for abstinence). During and immediately post treatment, both vouchers alone and CBT plus voucher incentives (contingency management) gave better results than CBT or MET alone on some outcomes (in all three studies with data). In one study, the odds ratios for continuous abstinence for $\geq$ 6 weeks was 6.0 [95% confidence interval (CI) 1.7 to 21.0] for vouchers alone compared with CBT and 4.1 (95% CI 1.2 to 14.4) for CBT plus voucher incentives compared with CBT. However, at later follow-ups (14–15 months), positive results were maintained for CBT plus vouchers but less so for vouchers alone (in two studies with data).

Psychiatric population studies

Seven studies assessed cannabis users with psychiatric conditions (525 randomised participants). Conditions included schizophrenia, psychosis or bipolar disorder (two studies), schizophrenia spectrum diagnosis (one study), psychosis (two studies) and major depression (two studies). Patients were referred for treatment (four studies) or recruited via both referrals and advertisements (three studies). Participants in three studies were classed as having high baseline use/dependence and in four as having low use. Risk of bias was assessed as high in six studies and unclear in one study.

Four studies assessed CBT (6–24 sessions) plus treatment as usual (TAU) compared with TAU alone. TAU involved psychiatric treatment, including psychosocial interventions, in two studies and a self-help book on substance abuse in one study. There were few significant between-group differences in any cannabis-related outcomes post treatment, and none at 10–12 months (within four small studies with limited data), with little change from baseline in either group (no change in two studies; change in cannabis use in one study). Two studies reported no significant difference between different types of 10-session therapy: one compared CBT, computer-delivered CBT and person-centred therapy; the other compared CBT and psychoeducation; however, the latter reported significant improvements from baseline in both groups (limited data). A further study reported improvements for 10-session CBT or computer-delivered CBT over single-session MI at 12 months' follow-up on one outcome (daily cannabis use).

Subgroup analyses

Number of sessions
Longer courses of CBT appeared somewhat more effective than shorter courses of MI, but results were mixed and this finding is not conclusive. This is based first on four studies directly comparing CBT (6–14 sessions) with MI (1–4 sessions), in which two favoured CBT and two showed no difference; and, second, on the fact that studies of CBT (4–14 sessions) compared with wait list showed slightly more positive effects than studies of MI (one or two sessions) compared with wait list. Clinical effectiveness of CBT over MI may have been attributable to treatment content, number of sessions, or both. There was no clear effect of number of sessions on results, either within studies of CBT (4–14 sessions) compared with wait list or within studies of MI (one or two sessions) compared with wait list.

Group or individual treatment
Twenty-seven studies provided individualised treatments, whereas three provided group treatment and two compared group treatment with individual treatment. Limited comparisons suggested a slight advantage of individual over group treatment, but this was based on extremely limited data.

High compared with low baseline cannabis use/dependence and participant age: studies with low baseline use appeared slightly less likely to show significant differences on all outcomes than studies of high use, but this difference was not substantial or conclusive. Mean age was similar across studies within most intervention/comparator categories.

Discussion

Strengths
This review is inclusive in scope, including a wide range of studies, interventions and outcomes. Results were analysed using narrative synthesis, in order to provide an overview of the direction of effects for each population group (general vs. psychiatric) and each intervention/comparator category (such as CBT vs. wait list) at different time points and to minimise loss of data.

Limitations and uncertainties
There was substantial heterogeneity between included studies in terms of their populations, interventions, comparators, outcome measures and data format, and most studies were considered at high risk. Owing to this heterogeneity, results were presented as an overview of outcomes reported per study and how many of these outcomes showed a significant difference. Detailed numerical results per study group were not presented in the main results section and meta-analysis was not undertaken. However, the narrative synthesis approach was thought to provide benefits in terms of interpretability. Studies in languages other than English were not included owing to time constraints.

Generalisability of findings

The included studies utilised various recruitment methods, involving voluntary recruitment, referral by a health-care professional, or both. The general population studies mostly used voluntary recruitment via advertisement and may therefore reflect more motivated populations and may not be generalisable to all cannabis users. In addition, the included studies recruited cannabis users with varying frequencies of cannabis use at baseline.

Conclusions

Implications for service provision

Owing to the heterogeneity (of interventions, comparators, outcomes and populations) and high risk of bias of the included studies, conclusions should be interpreted with caution. Based on the available evidence, courses of CBT and (to a lesser extent) one or two sessions of MI improved outcomes in a self-selected population of cannabis users. There is some evidence that CBT (6–14 sessions) may be more effective than briefer MI interventions, although results were mixed. Contingency management may also enhance long-term outcomes in combination with CBT. Results of CBT for cannabis cessation in psychiatric populations were less promising, but may have been affected by provision of TAU in both groups and the referred populations.

Suggested research priorities

The highest priority research area should be the investigation of the effects of number and frequency of sessions; in particular, the effectiveness of shorter courses of therapy, either brief motivational interventions (e.g. 1 or 2 sessions) or shorter courses of CBT (e.g. 4–6 sessions). It may also be useful to assess relative cost-effectiveness of longer and shorter interventions. If shorter interventions are found to be as effective as, or more effective than, longer interventions, such treatments could be made more widely available. Combined CBT plus contingency management (vouchers for abstinence) may be worthy of further study. In addition, mutual aid therapies and self-help groups (for which no RCTs were identified in this review) may be worth investigating, as well as interventions such as nicotine replacement therapy in conjunction with other treatments. Studies should report included interventions in sufficient detail to allow replication.

The effects of recruitment method (i.e. voluntary vs. referral) should be considered. In this review, most studies used voluntary recruitment, with the psychiatric studies using referral. Future studies may wish to align outcomes with existing studies when possible. The main classes of outcome in this review were level of attendance, cannabis use (via a range of measures), severity of dependence and cannabis-related problems. Trial methodology should be carefully considered. In populations with psychiatric conditions, TAU arms should not confound the study intervention when possible. Studies should follow up patients beyond treatment cessation and may wish to include an inactive control arm. Wait list controls with long-term follow-up are also valuable; however, this needs to be balanced against ethical considerations and acceptability to trial participants.

Study registration

This study is registered as PROSPERO CRD42014008952.

Funding

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