

Psychosocial interventions for Cannabis use disorder

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Rationale for intervention

- Cannabis use disorder (CUD) causes clinically significant psychiatric distress and social impairment
- Lifetime rates of CUD are at 5.4% of Australians, 6.3% of the US
- Risk increases among:
 - Males
 - those with alcohol use or affective disorders
 - those who use during adolescence
 - Those who use daily

Rationale for intervention

- Demand for treatment is increasing
Yet, only about one third of those in need will seek treatment
- Various barriers inhibit treatment seeking:
 - not being aware of treatment options
 - thinking treatment is unnecessary
 - wanting to avoid stigma
 - concerns about confidentiality
 - lack of accessibility
 - costs of treatments

Cannabis treatment trials

- Drug Counselling and Social Support
- Relapse Prevention
- Cognitive Behavioural Therapy (CBT)
- Motivational Enhancement Therapy (MET)
- MET+CBT
- Contingency Management
- Mindfulness
- Multidimensional Family Therapy

Previous systematic reviews

- Adolescents in schools ([Tobler 1999](#))
- Those with psychosis or depression ([Baker 2010](#))
- Adolescents in the community ([Bender 2011](#))
- Internet & computer only ([Tait 2013](#))
- Active treatment seekers only ([Davis 2014](#))
- Pharmacotherapies ([Marshall 2014](#))
- Telephones ([Gates 2015](#))

Our review of treatment

- Inclusion criteria
 - Randomised Controlled Trial
 - 18+ years
 - Heavy cannabis use or treatment seeking
 - Little other illicit drug use
 - Treatment deliverable in outpatient setting

Our review of treatment

- **23 treatment trials (47 articles), 4045 participants**
- 15 studies in the US
- Treatments were all delivered in an outpatient design:
 - An average of seven sessions (1-14)
 - Conducted over approximately 12 weeks (1-56)

Included treatment styles

- Cognitive Behavioural Treatment (CBT; 15 studies)
- Motivational Enhancement Therapy (MET; 15 studies)
- CBT+MET (9 studies)
- Contingency Management (CM; 6 studies)
- Social Support (SS; 2 studies)
- Mindfulness Meditation (MM; 1 study)
- Drug Counselling (DC; 4 studies)

Included control groups

- Delayed or no treatment (11 studies)
- Minimal treatment (2 studies)
- Second active intervention (14 studies)
- Treatment as usual (TAU; 3 studies)

Outcomes of interest

- Cannabis use frequency
- Cannabis use quantity
- Point prevalence abstinence
- Symptoms of dependence
- Cannabis related problems
- Retention in treatment
- Motivation to change
- Other substance use
- Physical health concerns
- Mental health concerns
- Quality of life

Outcomes usually included

- Cannabis use frequency

- ~~• Cannabis use quantity~~

- ~~• Point prevalence abstinence~~

- Symptoms of dependence

- ~~• Cannabis related problems~~

- ~~• Retention in treatment~~

- ~~• Motivation to change~~

- ~~• Other substance use~~

- ~~• Physical health concerns~~

- ~~• Mental health concerns~~

- ~~• Quality of life~~

Important considerations

- Participant demographics
- Patterns and history of use
- Concurrent psychiatric illness
- Concurrent non-cannabis substance use
- Nature of treatment delivery*
- Nature of adjunct treatments or booster sessions
- Quality of evidence (risk of bias)

RESULTS

Quality of evidence

Bernstein 2009	+	+	-	+	+	+	+	+	+
Bonsack 2011	+	+	-	?	?	+	+	+	+
Budhey 2000	+	+	-	?	?	+	+	+	+
Budhey 2006	+	+	-	-	+	+	+	+	+
Carroll 2006	?	+	-	?	+	+	+	+	+
Carroll 2012	+	+	-	?	+	+	+	+	+
Copeland 2001	?	+	-	+	+	+	+	+	+
de Dios 2012	?	+	-	+	?	+	+	+	-
Edwards 2006	+	+	-	+	?	+	+	+	+
Fischer 2012	?	?	-	?	?	+	+	+	-
Hoch 2012	+	+	-	?	+	+	+	+	+
Hoch 2014	+	+	-	+	+	+	+	+	?
Jungerman 2007	+	+	-	?	+	+	+	+	+
Kadden 2007	+	+	-	?	+	+	?	?	?
Lee 2013	+	+	-	?	+	+	+	+	-
Litt 2013	+	+	-	-	?	+	+	+	-
Madigan 2013	+	?	-	+	?	+	+	+	-
MTPRG 2004	+	+	-	-	+	+	+	+	?
Roffman 1988	?	?	-	?	?	+	+	+	+
Stein 2011	?	+	-	+	?	+	?	?	+
Stephens 1994	?	?	-	?	+	+	?	?	+
Stephens 2000	?	+	-	?	+	+	+	+	+
Stephens 2007	+	+	-	?	+	+	+	+	+
	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias): Subjective outcomes	Blinding of outcome assessment (detection bias): Objective outcomes	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias	

Can treatment really help
reduce frequency of
cannabis use??

Reductions in frequency following intervention

- Moderate quality evidence:
 - At least one study at high risk of other bias
 - Data conversions were required
 - Follow up period varied from 7 weeks to 4 months

Reductions in frequency following intervention

- Compared to inactive control:
 - **6** fewer days of use
 - **10** fewer if the intervention was intense
 - **5** fewer if the intervention was less intense
- Compared to TAU: No significant difference
- Active treatment comparisons:
 - CBT typically superior to MET+CBT and MET
 - CM for abstinence helps but not necessary

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But, can treatment really
help you achieve abstinence??

Point prevalence abstinence

- Low quality evidence:
 - At least one study at high risk of other bias
 - Follow-up periods varied substantially from 3 months to 237 days
 - Heterogeneity in outcome measures (period of abstinence)

Point prevalence abstinence

- Active treatment: **37%** achieved PPA at end of treatment, **24%** at three month follow-up, **23%** after that
- Inactive control: **12%** achieved PPA at final follow-up
- Those receiving an intensive intervention were **3** times more likely to achieve abstinence in the short term
- Less intense interventions were about the same as inactive control

Can treatment really help you
reduce the amount you
smoke??

Reductions in quantity of cannabis used

- Very low quality evidence:
 - At least one study at high risk of other bias
 - Data conversions were required
 - Heterogeneity in outcome measures
 - Follow-up periods varied substantially from 7 weeks to 237 days
 - Lack of studies

Reductions in quantity of cannabis used

- Compared to inactive control:
 - **4** fewer joints used per day
 - **5** fewer if the intervention is intense
 - **3** fewer if the intervention is less intense
- Compared to TAU: No long term effect
- Active treatment comparisons: No particular treatment came out on top

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Reductions in quantity of cannabis used

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 - 3 fewer if the intervention is less intense
- Compared to TAU: No long term effect
- Active treatment comparisons: No particular treatment came out on top

Can treatment really help you
reduce your severity of
dependence??

Reductions to severity of dependence

- Low quality evidence:
 - At least one study at high risk of other bias
 - Follow-up periods varied substantially from 3 months to 237 days
 - Only four studies

Reductions to severity of dependence

- Compared to inactive control:
 - Mean difference of **4** symptoms
 - **8** fewer symptoms following intense intervention
 - **3** fewer symptoms following less intense intervention
- Active treatment comparisons: MET, CBT, MET+CBT all effective

Reductions to severity of dependence

- Compared to inactive control:
 - Mean difference of 4 symptoms
 - 8 fewer symptoms following intense intervention
 - 3 fewer symptoms following less intense intervention
- Active treatment comparisons: MET, CBT, MET+CBT all effective

Can treatment really help you
reduce cannabis-related
problems??

Reductions to cannabis problems

- Low quality evidence:
 - At least one study at high risk of other bias
 - Data conversions were required
 - Follow-up periods varied from 7 weeks to 4 months
 - Heterogeneity in outcome measures

Reductions to cannabis problems

- Compared to inactive control:
 - **3** fewer problems
 - **5** fewer problems following intense intervention
 - **2** fewer problems following less intense intervention
- Active treatment comparisons: Could not determine which treatment was best

Reductions to cannabis problems

- Compared to inactive control:
 - 3 fewer problems
 - 5 fewer problems following intense intervention
 - 2 fewer problems following less intense intervention
- Active treatment comparisons: Could not determine which treatment was best

Do those receiving treatment
actually complete the sessions??

Retention in treatment

- Moderate quality evidence:
 - At least one study at high risk of other bias
 - Heterogeneity in outcome measures

Retention in treatment

- Seven out of ten participants completed treatment
- Most studies assessing the impact of treatment retention found no association with treatment outcomes
- Data for direct treatment comparisons was scarce

Can treatment assist in any
other way??

Secondary outcomes

- Too few studies included these outcomes for definitive findings
- Motivation to quit did not consistently improve but was associated with improved outcomes
- Other substance use also did not consistently improve but was low to begin with
- Mental health also did not consistently improve although measures varied

Important considerations

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- Patterns and history of use
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- Concurrent non-cannabis substance use
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- Quality of evidence (risk of bias)

Important considerations

- Participant demographics

- ~~• Patterns and history of use~~

- Concurrent psychiatric illness

- ~~• Concurrent non-cannabis substance use***~~

- Nature of treatment delivery

- ~~• Nature of adjunct treatments or booster sessions~~

- Quality of evidence (risk of bias)

In summary...

Summary

- Weight of evidence focussed on MET, CBT and their combination
- Reduction in frequency without complete abstinence was common in the short term (within six months) but other outcomes were harder to treat
- Use of CM may be important in motivating initial quit attempts but loses impact over time

Summary

- Could not determine the most effective number of sessions but it is likely to be more than four despite the appeal of brief interventions
- Most participants completed treatment as intended but the importance of treatment completion or previous treatment experience has been overlooked

Summary

- Obvious need for further treatment vs treatment comparisons that include greater focus on outcomes beyond frequency of cannabis use
- Over representation of males, whites, Caucasians, younger individuals in their 20s-30s, and those living in the US



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