



Les interventions psychothérapeutiques dans le trouble de l'usage du cannabis

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**Les interventions psychothérapeutiques dans le trouble de
l'usage du cannabis**

Comparaison de deux revues de la littérature

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Index des abréviations

CM: Contingency management

CM-abs: Abstinence-based contingency management

CBT: Cognitive-behavioral therapy

DC: Drug counselling

DTC: Delayed treatment control

EM : Entretien motivationnel

MET : Motivational enhancement therapy

MM: Mindfulness-based meditation

RP: Relapse prevention

SS : Social support

TCC : Thérapie cognitive et comportementale

A. Introduction générale

Le cannabis est la substance illégale la plus consommée dans le monde d'après les données épidémiologiques actuelles (1, 2). Le nombre de personnes en recherche de traitement pour leur consommation de cannabis s'est accru en Europe au cours des dix dernières années (3). Ainsi, le trouble de l'usage du cannabis et sa prise en charge sont des enjeux de santé publique majeurs.

L'addiction est définie par la perte de contrôle de l'usage d'une substance ou d'un comportement renforçant. Les critères de trouble de l'usage peuvent être divisés en deux catégories correspondant à la perte de contrôle d'un côté, considérée comme la manifestation centrale du processus d'addiction, et, d'un autre côté, des conséquences sociales, un usage à risque et une tolérance pharmacologique, considérés comme des manifestations périphériques de l'addiction. Ces manifestations sont secondaires à la perte de contrôle (4-6).

Les changements récents dans les critères de classification des troubles de l'usage reflètent l'évolution du concept d'addiction et soulignent le rôle central du craving (4). Celui-ci est défini comme une envie irréprensible de consommer une substance ou d'exécuter un comportement gratifiant alors qu'on ne le veut pas à ce moment-là (7). Il est à la fois un marqueur diagnostique et pronostique de l'addiction : son augmentation est prédictive de la rechute et sa diminution favorise l'abstinence (8, 9). Le craving est donc une cible privilégiée du traitement des troubles de l'usage (5).

A ce jour, il n'y a pas de traitement pharmacologique validé pour l'addiction au cannabis (10). La prise en charge du trouble de l'usage du cannabis est donc centrée sur des interventions psychothérapeutiques. Deux revues de la littérature ont été publiées pour décrire les effets des interventions psychothérapeutiques (11) et psychosociales (12) dans l'addiction au cannabis. Notre travail se concentre sur ces deux revues afin de déterminer comment ont évolué les connaissances sur ce sujet au cours du temps.

En prenant en compte le rôle central du craving comme un marqueur pronostic et thérapeutique, notre objectif était de comparer les données des deux dernières revues systématiques de Cochrane concernant les interventions psychothérapeutiques et psychosociales (11, 12) dans l'addiction au cannabis et d'évaluer comment le craving y est considéré comme un médiateur de l'efficacité du traitement.

Nous avons extrait les données brutes des deux revues concernant leurs titres, objectifs, méthodes et résultats. Ces données ont été mises en forme dans un tableau afin de les comparer. Cela nous a permis de décrire les similarités et différences entre les deux revues. Pour chaque revue, nous avons également recherché l'occurrence du mot craving ou des synonymes dans le but de pouvoir classer les études en fonction de si l'intervention était ciblée ou non sur le craving.

La comparaison des données a montré que les objectifs et la méthode des deux revues étaient très similaires. Quatre interventions étaient communes aux deux revues : la thérapie cognitive et comportementale (TCC), l'entretien motivationnel (EM), la thérapie basée sur l'obtention d'un soutien social et le management des contingences. La revue de 2016 incluait également la méditation en pleine conscience et le « counselling ». Une des principales différences entre les deux revues était la présence d'une méta-analyse dans la revue de 2016, la revue de 2006 étant uniquement descriptive.

La première revue de la littérature rapportait six études avec un total de 1297 participants alors que la deuxième revue rassemblait 23 études correspondant à 4045 participants. Cinq études

étaient communes aux deux revues et leur analyse était similaire dans les deux revues. 17 nouvelles études étaient incluses dans la revue de 2016, représentant 2703 participants.

Une seule étude de la revue de 2006, Sinha 2003, était exclue de la revue de 2016 car la majeure partie de l'échantillon rapportait un usage quotidien d'autres substances illégales ou d'alcool ou bien une autre addiction. Une seule étude incluse dans la revue de 2016, Roffman 1988, n'était pas incluse dans la revue de 2006 car cet article rapportait les résultats préliminaires d'une autre étude déjà incluse dans la revue de 2006, Stephens 1994.

La revue de 2016 a confirmé les résultats de la première revue. Toutes les interventions étaient plus efficaces qu'un groupe contrôle. Même les interventions courtes peuvent être efficaces mais la fréquence de l'intervention influence le résultat. Les données actuelles suggèrent l'utilisation d'une combinaison de thérapie cognitive et comportementale et d'entretien motivationnel avec adjonction de management des contingences pour l'abstinence lorsque cela est possible. Les interventions plus longues, définies par un minimum de quatre sessions, ou ayant une fréquence plus élevée permettent d'obtenir de meilleurs résultats.

La revue de 2016 a également ajouté des études incluant des personnes avec trouble psychotique. Toutefois, aucune de ces trois études n'a retrouvé de différence significative entre les différentes interventions et un traitement usuel pour le trouble psychotique.

Aucune mention du craving n'était faite dans la revue de 2006 et quelques rares occurrences du craving étaient notées dans la revue de 2016. Ces mentions ne permettaient pas de classer les interventions en fonction de leur prise en compte du craving.

Dans les deux revues, la majorité des études portait sur les thérapies cognitives et comportementales et l'entretien motivationnel et peu d'études étaient disponibles sur des

thérapies alternatives. Cet élément limite donc les conclusions concernant les autres types de psychothérapies que la TCC et l'EM.

L'efficacité des TCC et de l'EM dans la prise en charge de l'addiction au cannabis retrouvée dans ces deux revues est cohérente avec les résultats des revues portant sur le trouble de l'usage du cannabis (13-16) et sur les autres troubles de l'usage (17-19).

Tous ces éléments ont des implications importantes pour la pratique clinique. L'efficacité des psychothérapies est dépendante de la durée et de la fréquence de l'intervention. Par conséquent, pour la prise en charge de l'addiction au cannabis, une première intervention composée d'au moins quatre sessions serait recommandée. Si cette intervention s'avère insuffisante, augmenter sa fréquence ou sa durée ou bien la combiner avec une autre intervention seraient des stratégies pertinentes.

Des recherches supplémentaires sont nécessaires pour évaluer les bénéfices à long-terme des psychothérapies afin de confirmer si les résultats obtenus peuvent être maintenus ou bien diminuent avec le temps. Par ailleurs, très peu d'informations sont actuellement disponibles concernant les mécanismes d'action des psychothérapies sur le craving. De nouvelles études centrées sur le craving sont nécessaires afin de déterminer si, en ciblant ce symptôme essentiel de l'addiction, l'efficacité des psychothérapies peut être augmentée.

L'article présenté ci-après a été soumis à la publication dans le Journal of Substance Abuse Treatment.

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B. Article

Psychotherapeutic interventions for cannabis use disorder. What do we know and what should we do?

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Abbreviations: CM: Contingency management, CM-abs: Abstinence-based contingency management, CBT: Cognitive-behavioral therapy, DC: Drug counseling, DTC: Delayed treatment control, MET: Motivational enhancement therapy, MM: Mindfulness-based meditation, RP: Relapse prevention, SS: Social support

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ABSTRACT

Background: Cannabis use disorder is the most commonly reported illegal substance use disorder and demand for treatment is growing worldwide.

Objectives: Our aim was to compare the two last Cochrane systematic reviews of the literature concerning psychotherapeutic and psychosocial interventions for cannabis use disorder to determine what new evidence emerged and how craving was considered as a treatment mediator.

Method: We extracted raw data from both reviews regarding their titles, objectives, methods and results. This information was analyzed by face validity to distinguish apparent differences from real differences. It enabled us to describe similarities and differences between reviews. We also screened both reviews looking for craving or related words.

Results: The objective and methods of both reviews were mostly similar. Although the second review covered a wider range of psychotherapies, including drug counseling and mindfulness-based meditation as an intervention group and minimal treatment as a control group. Five of the six studies included in the first review were also included in the second review. One study excluded from the first review was included in the last review that included an additional 17 studies published after the first review. The 2016 review performed a meta-analysis whereas the first review was descriptive. Both reviews supported the efficacy of motivational enhancement therapy and cognitive and behavioral therapy interventions with adjunction of contingency management for abstinence when possible. There was no relevant mention of craving in the 2006 review and very few in the 2016 review.

Conclusion: The methods and results of the last two Cochrane reviews on psychosocial interventions for cannabis use disorder were mostly similar. Consistent with other reviews on the same subject and reviews of psychotherapies for other substance use disorders, the 2016 review confirmed evidence already available in the 2006 review. Instead of confirming already confirmed evidence, future

research is needed to determine if craving focused treatment would increase efficiency and how to maintain initial treatment outcomes long-term.

Key words: Psychotherapy; cannabis use disorder; review; treatment outcome

1 INTRODUCTION

Cannabis remains the most used illegal substance worldwide (1, 2) and a major public health concern (3). Over the past 10 years, the number of first-time treatment for cannabis use-related problems has been stable in the USA but has increased by 76% in Europe and access to treatment remains low for Europe and the USA (4, 5).

Criteria for substance use disorders and behavioral addictions can be divided into impaired control related criteria considered as central to addiction and social impairment, risky use and pharmacological adaptation all considered as consequential to impaired control (6-8). Recent changes in addiction diagnostic criteria underscore the key role of craving (8), defined as an intense urge or desire to use a substance or to perform a behavior (6). Studies have shown that craving change over periods of hours predicts substance use over the next hours, making craving a prognostic symptom (9, 10). An increase in craving intensity predicts an increased probability of use and, conversely, a decrease in craving intensity predicts more abstinence, hence contributing to making craving a target for treatment (6).

To date, no pharmacological compound is licensed for cannabis addiction treatment (11), making psychotherapeutic interventions the main treatment. The Cochrane Collaboration is considered as the optimal organization for producing systematic reviews of the literature of treatment procedures (12) and has published reviews in order to explore the effect of psychotherapeutic (13) and psychosocial interventions (14) in cannabis use disorder. Taking into account the central role of craving as a prognostic marker of cannabis use and a target for treatment interventions, our aim was to compare the evidence from the two last Cochrane systematic reviews of the literature concerning psychotherapeutic and psychosocial interventions ((13),(14)) in cannabis use disorder and to evaluate how craving is considered as a treatment mediator. Our current work focused on these two reviews to determine the current state of knowledge and how time and more studies increased our knowledge on this subject.

2 METHODS

2.1 Document selection

Two reviews from the Cochrane Library have covered non-pharmacological treatments of cannabis use disorder. One is currently active and replaced a previous review that was not updated. We chose these two reviews to examine the current state of knowledge and how the area covered was changed with time.

2.2 Comparison of objectives, methods and results

To compare the two reviews, we extracted raw data from both reviews in the corresponding section of the article regarding their titles, objectives, methods and results. These data were presented in a tabular form. Each information extracted was analyzed by face validity to distinguish apparent differences from real differences.

We then collected and described similarities and differences between reviews on their objectives, methods, selection criteria of included studies, outcomes, search methods and results. Any difference noted was analyzed and questions raised by analysis were solved by information available at this stage of understanding. If not, unsolved problems were analyzed in the next section with further information available.

For each topic, we also screened both reviews looking for craving or related words such as urge, desire and compulsion.

2.3 Analysis of craving's influence on the efficacy of interventions

If craving was mentioned in the objectives, methods and results, we planned to sort the included studies of these reviews into two groups whether their intervention took craving into account or not. The aim was to compare the efficacy of interventions aiming at managing craving versus interventions that do not specifically address craving.

3 RESULTS

3.1 Comparison of titles and objectives

Both reviews screened non-pharmacological treatments in patients with cannabis abuse and/or dependence or use disorder. The 2006 review aimed at cannabis abuse and/or dependence whereas the 2016 review focused on cannabis use disorder. The 2006 review's title focused on psychotherapeutic interventions whereas the 2016 review focused on psychosocial interventions. That difference did not appear in the objective.

3.2 Comparison of methods

3.2.1 Criteria for considering studies in the reviews

3.2.1.1 *Type of studies and participants*

Both reviews included randomized studies only. Regardless of gender and nationality all included patients were adults seeking treatment for cannabis abuse or dependence in outpatient settings. The history of previous treatments was always considered but was not an eligibility criterion.

Diagnostic criteria used in 2006 were those of DSM IV whereas the 2016 review used DSM 5 criteria.

The 2016 review also included patients who were near daily cannabis users or were seeking treatment for cannabis use without systematic screening for diagnostic criteria.

Current dependence on alcohol or any other substance (except nicotine) were exclusion criteria in both reviews. Near daily use of other substances (excluding nicotine) was also an exclusion criterion in the 2016 review. The impact of participant motivation at baseline on treatment outcome was assessed in the 2016 review when available.

3.2.1.2 *Type of intervention*

The experimental intervention was composed of one or more treatment for the management of cannabis abuse or dependence delivered in groups or individually in outpatient settings. Both reviews considered the following interventions: cognitive behavioral therapy (CBT) and motivational

enhancement therapy (MET). The 2006 review also considered family support network, family therapy. The 2016 review also included studies using components of cognitive and motivational approaches delivered with focus on the importance of obtaining social support (SS), drug counseling and/or education (DC), contingency management (CM), mindfulness-based meditation (MM), relapse prevention (RP).

The control group could be untreated or delayed treatment control (DTC) or another intervention than the intervention group. The 2016 review considered minimal treatment as a possible control group.

3.2.1.3 Type of outcome measures

Severity of dependence or use disorder, self-reported use of cannabis and retention in treatment were common primary outcomes in both reviews. Rate of abstinence was also taken into account as a measure of self-report use of cannabis in the 2016 review. The 2016 review also considered level of cannabis related problems as a primary outcome whereas it was a secondary outcome in the 2006 review.

Frequency of self-reported other substance intake was a common secondary outcome in both reviews. Motivation to change cannabis use, mental health and symptoms of affective disorders were analyzed as secondary outcomes in the 2016 review.

3.2.2 Search methods for identification of studies

The search strategy was based on the Cochrane Sensitive Search Strategy for Randomized Controlled Trial without language restriction. Both reviews screened Cochrane Central Register of Controlled Trials which includes the Cochrane Drugs and Alcohol Group Register of Trials, MEDLINE, EMBASE, CINAHL and PsycInfo. Toxibase was also screened as a database in the 2006 review. The 2016 review also searched for ongoing clinical trials and unpublished studies via Internet searches on the

following websites: ClinicalTrials.gov and World Health Organization International Clinical Trials Registry Platform.

Authors of both reviews proceeded to manual search the reference lists of all potentially eligible studies.

3.2.3 Data collection and analysis

Two authors independently screened the title and abstracts of all publications identified by the search strategy. All potentially eligible studies were obtained as full-text articles and independently assessed for inclusion.

In both reviews, two authors assessed methodological quality through the procedure established by Cochrane Systematic Reviews. The 2006 review rated methodological quality by evaluating allocation concealment, performance bias, attrition bias, detection bias and intention to treat analysis. The 2016 review re-assessed the risk of bias of studies included in the previous review to conform with recommended methods outlined in the most recent version of the Cochrane Handbook for Systematic Reviews of Interventions and the requirements of RevMan 5.3. It implied to screen the following domains: sequence generation, allocation concealment, blinding, incomplete outcome data, selective outcome reporting and other issues.

In both reviews, the authors independently extracted data. When key information relevant to the systematic review was missing, reviewers contacted investigators and asked them to provide additional data and clarifications. If reports pertained to overlapping patients, they retained only the largest study, to avoid duplication of information.

Due to heterogeneity of the included studies, no meta-analysis could be performed in the 2006 review whereas the 2016 review did perform a meta-analysis. They also performed subgroup analyses on potential sources of heterogeneity.

3.3 Comparison of results

3.3.1 Description of studies

3.3.1.1 *Results of research*

The search strategies resulted in 1820 records of which 39 studies were considered eligible for the 2006 review versus 8636 records of which 151 were considered eligible in the 2016 review. Finally, 6 studies met the inclusion criteria in the 2006 review, involving 1297 participants, whereas 23 studies met the inclusion criteria in the 2016 review, involving 4045 participants.

3.3.1.2 *Included studies*

Five studies were common to both reviews (15-19). One study included in the 2006 review was excluded from the 2016 review (20). One study included in the 2016 review was not included in the 2006 review (21) although it was available at the time. Seventeen studies were only included in the 2016 review, due to the new period this review covered (22-38).

3.3.1.2.1 Treatment regimen and setting

In both reviews, all included studies had an outpatient design and most of them took place in the United States.

Four different therapeutic modalities were common to the two studies: cognitive behavioral therapy, motivational intervention, social support and contingency management. In the 2016 review, other interventions such as mindfulness-based meditation and drug education and counseling were considered.

Both reviews used a delayed-treatment control condition as a control group.

3.3.1.2.2 Duration of trials and funding sources

In both reviews, the duration of the studies ranged from one to 16 months.

In the 2016 review, most of the included studies took place in the United States and were funded by the National Institute on Drug Abuse. Funding sources of the 2006 review were not reported but all of the studies except one took place in the United States.

3.3.1.2.3 Participants

Participants included in the 2016 review did not always meet diagnostic criteria for substance use disorder as foreseen in the inclusion criteria. The authors also included studies based on a cutoff in the frequency of cannabis use.

In the 2006 review, participants' mean age was 33.1 years versus 28.2 years in the 2016 review.

3.3.1.2.4 Types of comparison

In the 2006 review, one study compared CBT 1-session versus CBT 6-session versus DTC (16). One study compared MET (3-session) versus MET + voucher (3-session) (20). Four studies compared CBT with other therapies: CBT (10-session) versus social support group (10-session) (18); CBT versus MET (15, 17, 19).

Due to the variety of interventions in the 2016 review, study results were pooled into three categories : any intervention versus inactive control (16-19, 22, 30-32, 34, 38), any intervention versus treatment as usual (23, 28, 36), intervention versus intervention (15-19, 21, 24, 32, 38).

3.3.1.3 *Excluded studies*

Sinha 2003 was excluded of the 2016 review because most of the sample reported using other illicit substances or alcohol near daily or reported another substance use disorder. However, this exclusion criterion was common between the two reviews.

Roffman 1988 was not included in the 2006 review because this article consisted in preliminary results of one of two cohorts.

3.3.2 Risk of bias in the included studies

3.3.2.1 *Randomization*

In the 2006 review, analysis of randomization was only descriptive whereas in the 2016 review, it was rated between low, high and unclear risk of selection bias. These differences were expected as foreseen in the methods section.

3.3.2.2 Allocation concealment and blinding

In the 2016 review, all studies were at high risk of performance bias since participants and providers could not be blinded to the allocated intervention and outcomes. In the 2006 review, authors considered that all the participants did not know the other available group treatment.

3.3.2.3 Attrition bias and other bias

Both reviews evaluated attrition bias with similar results. Reporting of other bias was only available in the 2016 review.

3.3.3 Effects of intervention

3.3.3.1 Primary outcomes

3.3.3.1.1 Retention in treatment

For the studies common to both reviews, identical results were reported. The 2016 meta-analysis reported that, on average, 70 % of participants completed treatment. In this review, most of the studies that investigated whether greater treatment retention was associated with improved treatment outcomes found no such significant relationship (15, 24-27, 33, 35, 37). In contrast, Copeland 2001 reported significantly improved outcomes in terms of dependence and related problems among treatment completers compared with non-completers for both six-session and single-session CBT interventions.

3.3.3.1.2 Cannabis use and abstinence

3.3.3.1.2.1 Reduction in frequency of cannabis use

3.3.3.1.2.1.1 Intervention versus inactive control

The most recent review found more data regarding effectiveness of any intervention compared to an inactive control. Those receiving a high-intensity intervention (more than four sessions or duration longer than one month) showed the greatest differences compared with those given inactive control. However, three studies failed to show effectiveness over inactive control (16, 29, 35).

3.3.3.1.2.1.2 Intervention versus treatment as usual

Only the 2016 review reported such studies (23, 28, 36) and neither showed a significant treatment effect over control.

None of the studies included in the 2006 review compared intervention versus treatment as usual because, contrary to the 2016 review, the 2006 did not consider minimally treated control as a possible control group.

3.3.3.1.2.1.3 Intervention versus intervention

In the 2016 review, Roffman 1988 found that reductions in frequency of cannabis use were greater at one-month follow-up for those receiving RP as compared with those treated with SS. This study was not included in the first review because the complete data was published in Stephens 1994. In this later study, there was no difference in outcome between treatment groups.

In the 2006 review, CBT had a better efficacy than the MET treatment (15, 19). These results were confirmed by the latest review that reported the intervention with the best evidence for reducing frequency of cannabis use was likely to be a MET + CBT combination enhanced by abstinence-based CM when available.

However, the two reviews did not describe identical studies in the same way. In the 2006 review, authors reported that MTPRG 2004 compared MET versus CBT whereas, in the 2016 review, authors described MTPRG 2004 as a comparison of MET versus MET + CBT. A similar difference was noted regarding Budney 2000. These differences might underestimate the efficacy of MET + CBT found in the 2006 review.

3.3.3.1.2.2 Point-prevalence abstinence rates

Measures regarding abstinence rate were not systematically screened in the 2006 review. Thus, very few data were available for comparison.

3.3.3.1.2.2.1 Intervention versus inactive control

In the 2016 review, participants receiving any intervention were nearly two times more likely to achieve point-prevalence abstinence at short-term follow-up compared with those given inactive control. Those receiving a high-intensity intervention showed the greatest chance of achieving a difference compared with those given inactive control. Those receiving CBT showed the greatest chance of achieving a difference followed by those receiving MET + CBT and those given MET.

3.3.3.1.2.2.2 Intervention versus treatment as usual

In the 2016 review, Edwards 2006 found no significant differences in effects of treatment between a 10-session DC intervention and control at end of treatment or at six-month follow-up.

3.3.3.1.2.2.3 Intervention versus intervention

The 2016 review confirmed the results found in the 2006 review for studies in common. Only two studies reported a significant difference of CBT over MET (15, 19). None of the additional studies included in 2016 showed a significant difference (15, 21, 25, 32).

3.3.3.1.2.3 Continuous abstinence rates

3.3.3.1.2.3.1 Intervention versus inactive control

Copeland 2001, a study included in both reviews, reported a significant effect of treatment for those receiving a six-session or a one-session CBT intervention versus an inactive control to achieve continuous abstinence.

More recent studies included in the 2016 review confirmed that any intervention (MM, MET + CBT) seems more efficient than an inactive control (27, 30, 31).

3.3.3.1.2.3.2 Intervention versus treatment as usual

In the 2016 review, no included study compared continuous abstinence rates among those receiving intervention or treatment as usual.

3.3.3.1.2.3.3 Intervention versus intervention

Both reviews reported no significant difference regarding studies in common (15-17). Further studies in the 2016 review failed to show superiority of any intervention over another (24-26, 32, 33).

3.3.3.1.2.4 Quantity of cannabis used (joints per day)

3.3.3.1.2.4.1 *Intervention versus inactive control*

The 2016 review confirmed that participants receiving any intervention reported fewer joints per day of use at follow-up compared with those receiving inactive control, as it was previously reported in the 2006 review.

Further analysis in the 2016 review reported that those receiving a high-intensity intervention (more than four sessions or duration longer than one month) showed the greatest difference compared with those given inactive control and those receiving an intervention of low intensity also used fewer joints per day of use. Those receiving MET + CBT used the fewest joints per day of use followed by those receiving CBT and MET. However, across these studies, no between-group differences were noted by any study beyond nine-month follow-up.

3.3.3.1.2.4.2 *Intervention versus treatment as usual*

In the 2016 review, Bonsack 2011 found that MET was superior to treatment as usual across six months although no significant difference was found at 12-month follow-up.

3.3.3.1.2.4.3 *Intervention versus intervention*

A few studies provided positive results across both reviews (16, 19, 24, 38). However, an important heterogeneity regarding assessment measures and the type of intervention considered was noted.

3.3.3.1.3 Severity of cannabis dependence/use disorder

3.3.3.1.3.1 **Intervention versus inactive control**

The 2016 review confirmed the results found in the 2006 review regarding the efficacy of any intervention over DTC on the severity of cannabis use disorder. This review also reported a dose-effect link and analyzed that those receiving MET + CBT reported the fewest symptoms of dependence at short-term follow-up, after the end of the intervention.

3.3.3.1.3.2 Intervention versus treatment as usual

In the 2016 review, Edwards 2006 compared 10-session DC versus treatment as usual and found no significant differences between groups at six-month follow-up.

3.3.3.1.3.3 Intervention versus intervention

The 2016 review reported similar results to the first review. It suggested that an intervention including either MET or CBT alone or both would likely show effectiveness in reducing the severity of cannabis dependence compared with minimal treatment controls. Those trials that included comparisons between two active interventions most often included MET + CBT treatments and found that better treatment outcomes were associated with the more intensive format and the including CM would improve outcomes further.

3.3.3.1.4 Level of cannabis-related problems

3.3.3.1.4.1 Intervention versus inactive control

The 2016 review confirmed the results found in the 2006 review regarding the efficacy of any intervention over DTC on the severity of cannabis use disorder. However, a few studies not included in the meta-analysis failed to demonstrate a significant effect over control (22, 34, 35, 37).

3.3.3.1.4.2 Intervention versus treatment as usual

No study included in the 2016 review compared the level of cannabis related problems among those receiving intervention or treatment as usual.

3.3.3.1.4.3 Intervention versus intervention

No difference was reported between RP and SS neither in Roffman 1988, nor in Stephens 1994.

In the 2016 review, MET was found to be inferior to MET + CBT (15, 19) . This result contrasted with the 2006 review reporting that in Budney 2000, no differences between CBT and MET were observed on Marijuana Consequences Questionnaire or Global Symptom Index.

Two studies evaluated CM adjuncts and CM alone versus alternative treatment and found no between-group difference (24, 33).

3.3.3.2 *Secondary outcomes*

3.3.3.2.1 Other substance use

3.3.3.2.1.1 Intervention versus inactive control

In both reviews, no intervention was superior to inactive control.

3.3.3.2.1.2 Intervention versus treatment as usual

None of the studies included in the 2016 review reported data regarding changes to non-cannabis substance use from baseline to follow-up.

3.3.3.2.1.3 Intervention versus intervention

Almost none of the interventions showed a significant effect over another.

The 2016 review reported that in Budney 2000, participants receiving MET + CBT + CM-abs intervention reported greater reductions in alcohol and other substance use compared with those receiving MET or MET + CBT. In the 2006 review, authors reported that in this study no significant pre-treatment to post-treatment changes in alcohol use were observed between or within treatment groups as measured by self-reported number of days of alcohol use and the ASI alcohol composite score.

3.3.3.2.2 Motivation to quit and mental health

In the 2016 review, motivation to quit and mental health were secondary outcomes whereas they did not figure in the outcomes studied in the 2006 review.

None of the studies included reported a significant effect at the end of follow-up either regarding intervention versus inactive control, or versus treatment as usual or versus intervention.

3.4 Search for craving mentions

No relevant mention of craving or equivalent was noted in the 2006 review.

In the 2016 review, a few mentions of craving were noted. These regarded pharmacotherapies to assist with cannabis withdrawal and reduce cravings, and the role of psychosocial interventions to determine healthy distractions from cravings and teaching harm reduction techniques when these distractions failed. Two other mentions of craving were noted in the titles of excluded studies.

4 DISCUSSION

4.1 Summary of findings

Our objective was to compare the evidence from the two last Cochrane systematic reviews of the literature concerning psychosocial interventions for cannabis use disorder and to report how craving was considered as a treatment mediator. We found that their methods were similar, although the second review covered a wider range of interventions by also including mindfulness-based meditation and drug counseling.

The first review reported 6 studies with a total of 1297 participants and the latest review reported 23 studies with a total of 4045 participants. Five studies were in common and their analysis was similar in both reviews. Seventeen studies were only included in the 2016 review, due to the new period this review covered, representing 2703 participants. These studies represent new evidence unavailable at the time of the first review.

Only one study of the 2006 review, Sinha 2003, was excluded from the 2016 review because most of the sample reported using other illegal substances or alcohol near daily or reported another substance use disorder. However, this exclusion criterion was common between the two reviews. Roffman 1988 was not included in the 2006 review because this article consisted in preliminary results of one of two cohorts. This inclusion in the 2016 review is surprising since the method

specified, as in the 2006 review, that to avoid duplication of information, authors retained only the most final follow-up.

More than the results of included studies, comparing electronic search strategy and key words used in both reviews would have been interesting but this data was not available for the 2016 review.

The 2016 review essentially confirmed the results already available in the first review, rather than bringing new information, albite the 17 new studies available. Any intervention was more efficient than an inactive control on all primary outcomes, regardless of the intervention considered or method used to measure it. Even minimal and short intervention can be effective, but the frequency of the intervention influenced the outcome. The available evidence suggests the use of MET + CBT interventions with adjunction of CM-abs when possible. This conclusion was already available in the first review but was confirmed by additional studies in the second review. It also confirmed that more intense and longer interventions would provide better results. A low-intensity intervention was defined by a maximum of four sessions, usually over a weekly timeframe.

The 2016 review added more recent studies focusing on participants in treatment for psychosis. But it found no between-group differences regarding primary and secondary outcomes when comparing any intervention versus treatment as usual for this specific population.

In the 2006 review, we found no mention of craving and very few mentions were noted in the 2016 review that did not allow to determine the potential added value of craving focused interventions. If craving is a driving force for substance use disorder, then psychotherapies focusing on craving would be expected to have better results than those that do not. This hypothesis could support the efficacy of CBT through functional analysis of marijuana use and cravings and learning of skills to cope with situations that trigger use (39). MET addresses ambivalence about quitting and seeks to strengthen motivation to change (40). But little is known about mechanisms of how MET could interfere with craving.

4.2 Quality of results and applicability of evidence

An important difference between the two reviews was that the first review was only descriptive whereas the 2016 review did perform a meta-analysis. Due to this difference, data was less systematically reported in the first review and sometimes lowered our ability for comparison of studies in common to both reviews. If so, we considered that, by default, studies in common would have the same results in both reviews.

In the 2016 review, participants had to meet diagnostic criteria for cannabis abuse or dependence, as in the 2006 review, but could also be included if they were at least near daily users without screening of diagnostic criteria. This difference between the two reviews might lower the comparability of their results. The 2016 review may find results concerning participants that do not meet diagnostic criteria for cannabis use disorder.

Table 1: Number of studies examining each type of psychotherapy in the two reviews combined.

CM: Contingency management, CBT: Cognitive-behavioral therapy, DC: Drug counseling, MET: Motivational enhancement therapy, MM: Mindfulness-based meditation, SS: Social support

Type of psychotherapy examined	Number of studies focusing on this intervention	Reference of studies
SS	2	(18, 21)
MM	1	(27)
DC	2	(25, 29)
DC + CBT	1	(28)
DC + CM	1	(25)
CM alone	3	(24, 26, 33)
MET	7	(15, 17, 22, 23, 34, 37, 38)
MET + CM	1	(20)
CBT	5	(16-18, 21, 26)

CBT + CM	2	(24, 26)
MET + CBT	9	(15, 19, 25, 30-33, 35, 36)
MET + CBT + CM	5	(15, 19, 25, 33, 35)

Most studies evaluated MET and CBT interventions but only one study tested mindfulness-based meditation, two compared social support and three concerned drug counseling (Table 1). Thus, the current evidence favors the use of MET + CBT but few alternative therapies were available. More studies would be necessary to conclude on the efficacy of MM and DC.

Overall, abstinence rates were low but were comparable to treatment for other substance use (41). Over one third of participants reported point-prevalence abstinence immediately post-treatment, and that proportion was reduced as the follow-up period increased to approximately one in four at final follow-up. An additional 25% of participants reported a significant reduction of their cannabis use.

The validity of the included trials was considered low to moderate and the heterogeneity of assessment of outcomes limited comparison between studies in both reviews. Most of the studies took place in the United States and the included participants that were typically young white Caucasian males. Thus, all these elements could limit the applicability of evidence to females, older participants and non-Caucasian populations.

Gates 2016 also raises the lack of information on tobacco consumption reported in the studies that could moderate cannabis use (42).

4.3 Perspectives from other reviews

The evidence regarding the efficacy of MET and CBT found in the two last Cochrane reviews is consistent with findings of other reviews (43-46). A combined intervention of MET + CBT was found

more potent than MET alone and interventions combining MET + CBT + CM is likely to produce positive outcomes (47). However, the exploration of the optimum magnitude and schedules of reinforcement in CM interventions needs to be pursued and the ideal number of MET or CBT sessions remains unclear (39, 47).

These results may be compared with psychotherapies for other substance use disorders supporting the efficacy of CBT and CM (41, 48, 49). The efficacy of brief interventions such as MET was also reported in other reviews regarding emerging adults (50). The availability of evidence-based care such as behavioral therapy remains low and the cost-effectiveness of the psychotherapy remains an important issue.

The absence of studies focusing on family therapy for adults experiencing cannabis use disorder is striking since this intervention is a powerful psychotherapy used in other substance use disorders (51). The acknowledgement of this intervention is well established for adolescents (52-54).

Furthermore, none of the reported studies focused on interpersonal therapy despite adaptation of this therapy for substance use disorder (55).

The use of innovative technologies and computer-based interventions was not evaluated in the two Cochrane reviews. No subgroup difference was detected between in-person versus online interventions in brief interventions for cannabis use in emerging adults (50) and further research is needed to assess this type of intervention in adults.

The 2016 review found no between-group differences when comparing any intervention versus treatment as usual for patients in treatment for psychosis. However, cannabis use is related to many effects on mental health (56-60) and the need for concurrent and integrated treatment for addiction and psychiatric disorders is underscored in the literature (61, 62).

4.4 Implication for practice

The treatment of addiction as a chronic disorder should be taught in a chronic care model (63). The efficacy of intervention is dependent on frequency or duration of the intervention. Thus, to address cannabis use disorder, a first intervention composed of at least four sessions would be recommended. If this intervention is ineffective, increasing its intensity or duration or combining it to another intervention seems a relevant strategy.

After obtaining significant outcomes, the clinician can observe if these can be maintained. If lowering frequency of the intervention leads to relapse or lowers the outcome, the intervention should be continued as in the practice for mental disorders, and more largely for chronic medical conditions.

4.5 Implication for research

Future research is needed to evaluate long-term benefits of psychosocial interventions to confirm if the efficacy of the intervention can be maintained or lowers with time. Specific studies need to be conducted to provide evidence that participants who are not responding to a first level of intervention would respond to a more frequent or a longer duration of intervention. These studies should also determine if there is a threshold beyond which there are no further new responders to a progressively increased treatment frequency or duration.

New studies focusing on craving should be conducted to determine if aiming at this crucial symptom of addiction can strengthen the efficacy of interventions.

5 CONCLUSION

When comparing the last two Cochrane reviews on psychosocial interventions for cannabis use disorders, we found that five of the included studies were in common. Both reviews supported the efficacy of MET + CBT interventions with adjunction of CM-abs when possible. These findings were

consistent with other reviews on cannabis abuse and dependence and other substance use disorders. However, very few mentions of cravings were made and very little is known on the effect of psychotherapies on this core symptom of addiction. Overall, there is a well-documented decrease of use or abstinence, but these abstinence rates are low, and relapse remains important. Thus, increasing the efficacy of existing psychosocial interventions is still a major concern for future research.

6 DECLARATION OF INTEREST

None

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Titre : Les interventions psychothérapeutiques dans le trouble de l'usage du cannabis

Résumé : L'addiction au cannabis est le trouble de l'usage d'une substance illégale le plus fréquent.

Notre objectif était de comparer deux revues Cochrane concernant les interventions psychosociales pour l'addiction au cannabis et d'évaluer comment le craving y est considéré. Nous avons extrait les données de ces revues. Elles ont été analysées pour décrire leurs similarités et leurs différences. Nous avons recherché les occurrences du mot craving.

L'objectif et la méthode des deux revues étaient similaires. La seconde revue avait aussi inclus le « counselling » et la méditation pleine conscience comme interventions étudiées. Cinq des six études incluses dans la première revue étaient aussi incluses dans la seconde. Un article inclus dans la première revue était exclu de la seconde et un article exclu de la première revue était inclus dans la seconde. Les deux revues rapportent l'efficacité de l'entretien motivationnel et des thérapies cognitivo-comportementales avec adjonction de management des contingences lorsque cela est possible. Aucune mention du craving n'est retrouvée dans la première revue et quelques mentions dans la seconde.

Des recherches sont nécessaires pour comprendre comment ces psychothérapies influencent le craving et pour développer des soins spécifiques et intégrés pour les personnes souffrant de trouble psychotique et d'addiction au cannabis.

Mots clés : Psychothérapie, Trouble de l'usage du cannabis, revue, efficacité thérapeutique

Title : Psychotherapeutic interventions in cannabis use disorder

Abstract : Cannabis use disorder is the most reported illegal substance use disorder.

Our aim was to compare two Cochrane systematic reviews of the literature concerning psychosocial interventions for cannabis use disorder and to evaluate how craving was considered.

We extracted raw data from both reviews and analyzed them by face validity to describe their similarities and differences. We screened both reviews looking for craving or synonyms.

The objective and methods of both reviews were mostly similar. The second review also included drug counselling and mindfulness-based meditation as an intervention group. Five of the six studies included in the first review were also included in the second review. One article included in the first review was excluded from the second and one article excluded from the first review was included in the last review. Both reviews supported the efficacy of motivational enhancement therapy and cognitive and behavioral therapy interventions with adjunction of contingency management for abstinence when possible. There was no mention of craving in the 2006 review and few mentions in the 2016 review.

Future research is needed to understand how these psychotherapies influence craving and to develop specific and integrated care for patients suffering from psychosis and cannabis use disorder.

Keywords : Psychotherapy; cannabis use disorder; review; treatment outcome