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▶ Treatment of adolescents with a cannabis use disorder: Main findings of a randomized controlled trial comparing multidimensional family therapy and cognitive behavioral therapy in The Netherlands.

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Drug and Alcohol Dependence: 2011, 119, p. 64–71.

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US research led by the programme's developers has found that a family therapy which intervenes across a child's social environment is more effective than alternatives for problem substance using teenagers, but this independent Dutch study found one-to-one cognitive-behavioural therapy just as effective, a finding at odds with the five-nation European study of which it formed a part.

SUMMARY Cognitive-behavioural therapy is a mainstay of addiction treatment, but young problem substance users might benefit more from approaches which intervene with their families and wider environments. The featured study tested this proposition among cannabis users in The Netherlands, pitting multidimensional family therapy against a more conventional, individually-focused cognitive-behavioural therapy.

Multidimensional family therapy addresses problem drug use and related problems among adolescents not through a set regimen, but by applying principles and a therapeutic framework to the individual seen as situated within a particular set of environmental influences and constraints. What distinguishes it from some other family therapies is that it extends beyond the child and family to all the social systems (school, juvenile justice, etc) in which the child may be involved.

US studies involving young cannabis users have shown promising results, but almost all these were obtained by one research group. Independent replication studies are needed, and it is unclear whether the impacts of multidimensional family therapy observed in the United States can be generalised to a country such as The Netherlands, where attitudes to cannabis use are more permissive.

To answer these questions the featured study compared the effectiveness of multidimensional family therapy and cognitive-behavioural therapy among adolescent cannabis users in The Netherlands. Between 2006 and 2009 it recruited 109 children aged from 13 to 18 diagnosed as experiencing cannabis abuse or dependence within the past year. They were among the intake at two treatment centres for adolescents in The Hague, one specialising in substance use problems, the other in mental and behavioural health. Patients in the study had to have regularly used cannabis in the past three months and have at least one parent figure who agreed to participate in treatment and in study assessments.

Key points

Multidimensional family therapy is one of a family of approaches which intervene not just with the individual young problem substance user but with their family and other important influences in their lives.

US research led by the programme's developers has found this approach more effective than alternatives or usual treatment or criminal justice procedures.

The featured study offers a test of the approach on a non-US caseload and in a study by independent researchers not involved in the programme's development.

As with another independent study, the approach was not found preferable overall to a well-structured alternative, but – again as in other studies – it might have been more effective with the more multiply and severely problematic youngsters.

In contrast to the Dutch findings, the five-nation European study of which this was one arm did find family therapy led to extra reductions in the prevalence and severity of cannabis dependence, and to extra reductions in days of use among children using most often.

Extra cost and the relative scarcity of qualified practitioners are an obstacle to implementation.

Participants averaged just under 17 years of age and 80% were male. According to their own accounts, they had on average been using cannabis for two years and at study entry had averaged 162 'joints' in the past 90 days – equivalent to nearly two a day. Other substances were used relatively little. They reported an average of about six violent or property crimes in the past three months and a substantial minority were diagnosed with a conduct disorder or oppositional defiant disorder. Four in 10 lived in single-parent households and the same proportion had been imprisoned.

They were allocated at random to multidimensional family therapy or cognitive-behavioural therapy, each planned to last five to six months and delivered on an outpatient basis. In weekly one-hour sessions, the cognitive-behavioural option focused on enhancing patients' motivation to change their addictive behaviour, and then on changing problem behaviours by means of training in self-control, social and coping skills, and relapse prevention. Monthly sessions were also scheduled for the parents to provide information and support, but not to intervene in family dynamics or parenting.

Multidimensional family therapy was more intensive, scheduled to occupy two one-hour sessions a week with the adolescent, parent(s) and/or family, plus contacts with schools and court staff and other people. It was delivered by trained and supervised therapists who followed a manual by the approach's developers and were trained by the developers, whose unit in the USA was contacted monthly for feedback and consultation.

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An attempt was made to reassess patients to track their progress, the final assessment being 12 months after the baseline assessment conducted just before patients were allocated to the treatments. At the final follow-up, just over 94% of patients were reassessed.

Main findings

Though continued cannabis use was the norm, the general picture was of improvements between the 90 days before starting treatment and the 90 days before the final 12-month assessment. However, these improvements were not significantly greater depending on the treatment to which patients had been allocated. This was the case despite multidimensional family therapy being far better attended; 8 in 10 children completed this treatment compared under 3 in 10 allocated to the cognitive-behavioural option, and they attended sessions totalling 35 hours compared to 10. Significant others in the child's life also spent much more time engaged in the multidimensional than in the cognitive-behavioural programme.

The number of days in which the children had used cannabis fell from 62–63 days out of 90 to 43 with multidimensional family therapy and 47 with cognitive-behavioural therapy, and the number of joints smoked fell respectively by 38% and 46%. In both options a good treatment response – at least 30% fewer cannabis-using days without substantial increases in use of other substances – was recorded by 42–44% of patients. In both options the number of crimes the children said they had committed fell by over a third.

Despite overall near equivalence, there were indications that children with the severest problems reduced their cannabis use more when allocated to multidimensional family therapy. This was the case whether severity was assessed in terms of intensity of cannabis use or substance use in general, criminality, presence of conduct and/or oppositional defiant disorders (among whom the extra reduction in days of cannabis use peaked at 42 days), and whether the child's family was assessed as dysfunctional. Differential impacts among children with severe substance use or exhibiting conduct and/or oppositional defiant disorders reached statistical significance.

The authors' conclusions

The study indicates that multidimensional family therapy and cognitive-behavioural therapy are equally effective in reducing cannabis use and delinquency among adolescents with a cannabis use disorder in The Netherlands, though neither was sufficient to eliminate problem substance use altogether among most of the children. Despite some limitations, the results are robust and applicable to most treatment-seeking adolescents with problem cannabis use in The Netherlands. The results are notable given the much higher treatment 'dose' – and consequently, higher costs – of multidimensional family therapy. As others have done, the study also found indications that multidimensional family therapy is differentially effective with adolescents and families with more severe problems.

It should be acknowledged that without a no-treatment control group, it cannot be said for certain that the treatments caused the observed improvements. Also the results derived from youngsters who frequently used cannabis, but not other substances, and who often had a history of delinquency and psychiatric treatment, and from a country with a relatively permissive attitude to cannabis.

FINDINGS COMMENTARY This well designed study has considerable clinical relevance since participants were seeking treatment in the normal way and were clearly using cannabis excessively as well as having other serious problems in their lives – the kind of caseload one would expect at substance use and mental health treatment services for young people, and the kind seen in the UK, where among under-18s cannabis is now by far the most common primary drug in relation to which treatment is provided. Numbers in England in 2013/14 continued to increase to a record 13,659, 71% of all young patients in specialist treatment. Forms of cognitive-behavioural therapy are a common component of treatment in Britain, but family-based therapeutic work is surprisingly rare, given that for example in England, over 80% of young patients were living with their families. Based on the evidence, British practice standardsfrom the Royal College of Psychiatrists on the care of young people with substance misuse problems commend family work, but say it is not standard in British services.

The featured study offers some guidance on whether for young, frequent cannabis users, UK services would do better to replace cognitive-behavioural therapies with family work in the form of multidimensional family therapy. The authors' answer is no, except perhaps for the more multiply problematic youngsters; otherwise implementing the family therapy would cost more without substantially improving outcomes.

However, this trial was the Dutch arm of a five-nation European study which overall did find that, compared to usual treatments at participating clinics, multidimensional family therapy led to led to extra reductions in the prevalence and severity of cannabis dependence, and to extra reductions in days of use among the children using most often. These effects were not consistent across the countries and some were absent in The Netherlands, but even there the multi-national report revealed that the number of patients who were dependent on cannabis at the final follow-up fell significantly more steeply among patients allocated to multidimensional family therapy than to treatment-as-usual. From about two-thirds of the patients being dependent, 12 months later 29% were dependent after being allocated to family therapy compared to 56% after treatment-as-usual.

The two reports and others from the trial offer clues to why findings were less clear cut in The Netherlands. Proportionately fewer family therapy patients in The Netherlands than in the other countries were diagnosed as dependent at the start of the study and they were relatively psychologically healthy and socially integrated, as might be expected in a country with a relaxed attitude to cannabis use. A less severe caseload was perhaps one reason why some of the results from The Netherlands were less encouraging than in other countries. Notably, in the featured study multidimensional family therapy scored best with children diagnosed as pathologically at odds with families and society; in other countries regular youth cannabis use can be expected to be associated with such traits to a greater degree, in turn giving a more comprehensive approach like multidimensional family therapy greater scope to excel compared to less comprehensive approaches. Long-term illness of key site staff members may also have affected implementation and results.

Finding from this five-nation study are particularly important since they derive from a rare test conducted with a European caseload and by a research team independent of the developers of the programme. Independence is important because in several social research areas (1 2 3), programme

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developers and other researchers with an interest in the programme's success have been found to record more positive findings than fully independent researchers.

Related research

Promising as US studies led by the developers of the programme have been (for example, 1 2), an independent US study found multidimensional family therapy slightly (but not significantly) *less* effective at promoting recovery from substance use problems than two other therapies, and substantially less cost-effective. Like the featured study, the focus was on young problem cannabis users, and cognitive-behavioural therapy featured among the alternatives.

Multidimensional family therapy is one of a similar set of programmes which integrate intervention in to several domains of a child's life. Such approaches *can* improve on typically less well organised and less extensive usual practices (1 2), but this is not always the case, and performance against stronger alternative approaches focused on the individual young cannabis user has been equivalent. Evaluations conducted independently of programme developers have usually been unconvincing, and results overall have not been as impressive as investment in these programmes might be seen to require, especially if they supplement rather than replace legally or socially required procedures. A major obstacle to their use is the expensive training and supervision and considerable skills required to implement them in ways which have been associated with good outcomes.

Best for the hardest cases?

Britain's National Institute for Health and Clinical Excellence (NICE) has recommended the types of programmes exemplified by multidimensional family therapy for problem-drinking children who also have other major problems and/or limited social support, signalling their particular suitability for the most severely affected and multiply problematic youngsters. In line with this recommendation, the featured study and others suggest that investment in multidimensional family therapy might be warranted for more problematic youngsters – particularly in the featured study, those so at odds with families and society that they can be diagnosed as exhibiting these traits to a pathological degree. Findings of the five-nation European study of which the featured study was one arm also suggest that compared to usual treatments at participating clinics, multidimensional family therapy particularly helps children with the deepest engagement with cannabis use – across the five countries, to the point where they were using the drug on average nearly every day.

These suggestions are tentative, however, primarily because the analyses were not planned in advance, so could have capitalised on chance variations in outcomes. The same limitation applies to the US trials which found multidimensional family therapy particularly suitable for high-severity youngsters. Other limitations too make the US findings an unreliable guide to whether multidimensional family therapy really is best for the most severely affected youngsters (details below), though the plausibility of the findings and the similar findings in Europe support this contention.

One of the US studies compared multidimensional family therapy with cognitive-behavioural therapy. In this study the researchers identified a set of youngsters (about 4 in 10 of the sample) initially more strongly engaged with and affected by substance use, and among whom this engagement weakened less over the course of treatment and a 12-month post-treatment follow-up. They also had more psychological problems. Among this sub-sample, engagement with substance use weakened significantly more when they had been allocated to multidimensional family therapy. Less engaged youngsters were affected about equally by both treatments. But these results were extracted only by a complex analysis which divided the sample up based not just on initial severity, but on their progress in and after treatment. The formation of these categories itself partly depended on the effects of the treatments, then the analysis tested whether the treatments affected each class differently – a circularity which complicates assessment of just what the results mean in practice. This analysis also had to contend with the fact that at each follow-up around 40% or more of the sample could not be reassessed, presumably meaning it had to estimate how they would have scored based on the available data. Such estimates can only be relied on if the data is randomly missing – in this case, if the reasons why a young person did not attend for reassessment had nothing to do with the factors which affected their response to treatment, an unlikely assumption.

Less affected by these complications, a simpler analysis of whether youngsters who started treatment with a deeper engagement with substance use became more disengaged when allocated to multidimensional family therapy was negative, as was one which tested initial psychological problems as a predictor of differential response to treatment. Nor were any relationships found between frequency of substance use and differentially benefiting from multidimensional family therapy. In a similar analysis of a second study comparing multidimensional family therapy to usual criminal justice procedures, the reverse was the case; here it was not the more deeply engaged youngsters who benefited more from multidimensional family therapy, but those who used substances most often. Such inconsistency heightens concerns over cherry-picking of results to demonstrate that multidimensional family therapy is best for most severely affected youngsters.

See also results from the multi-national parent study.

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