

Reefer madness revisited: cannabis and psychosis

While the US stands steadfast in its belief that cannabis use should not be tolerated at all, other countries in “Old Europe” such as Holland, Britain, Switzerland and Portugal as well as some Australian states and Canada have taken policy steps that have decreased the penalties for cannabis possession. These moves are being interpreted by many people, particularly young people, as giving the green light to cannabis use. Some see this policy trend as acceding to the inevitable, with surveys over the last 15 years reiterating that cannabis is now a part of the leisure landscape for young people and no longer has a forbidding mystique. So much so that many view cannabis as a benign drug, if a drug at all.

But no sensible commentator is claiming that cannabis is a harmless substance and, although it's hard to estimate whether levels of use will go up and increase the population at risk or remain the same in the light of legal changes, there are nevertheless a number of public health issues related to cannabis use which urgently demand attention. Paramount among these is the relationship between cannabis and psychosis. Are vulnerable young people putting themselves at risk of psychosis through their cannabis use and what should those dealing with young people with mental health problems advise?

The evidence base has already shown that cannabis can cause short-term psychotic reactions, especially in naïve users (Hall et al, in press), and can exacerbate the symptoms of those diagnosed with schizophrenia (Linszen et al, 1994). However, discerning the causal role of cannabis in precipitating schizophrenia has proved more knotty. For 15 years the only evidence supporting a causal link came from a Swedish study of 50,087 conscripts which found that self-reported “heavy” cannabis users were six times more likely to subsequently be diagnosed with schizophrenia than non-users (Andreasson et al, 1987). Standing alone, this study's findings tended to provoke more questions than answers and it is only in the last two years that further population-based prospective studies have reported (Arseneault et al in press). These include an extension of the original Swedish Army Study (Zammit et al, 2002), a popula-

tion-based survey from Holland (Van Os et al, 2002), and two prospective studies of the risk-increasing effects for psychosis of adolescent cannabis use from New Zealand (Arseneault et al, 2002; Fergusson et al, 2003). While each of these studies suffer from a number of methodological issues that constrain the composite picture we can draw from them – they use a variety of schizophrenia outcomes, have limited information on other drug use by the samples and have limited statistical power – taken together these studies suggest that at cannabis appears to be a component cause - part of a complex constellation of factors leading to psychosis.

What these studies suggest is that, while at an individual level cannabis use appears to lead to only a two-to-three-fold increase in the relative risk for later schizophrenia, at a population level, total elimination of cannabis use could lead to a 7-13% reduction in the incidence of schizophrenia. Larger population samples are needed to assess a greater number of individuals with psychotic disorders to test these findings; a recent modelling of the impact of rates of cannabis use against the incidence of schizophrenia in Australia failed to find a causal relationship (Degenhardt L et al, 2003). Research is also needed to understand the mechanisms by which cannabis may cause psychosis.

However, the public health message is clear. Some cases of psychotic disorder could be prevented by discouraging cannabis use, particularly among psychologically vulnerable youths, with the youngest cannabis users most at risk (Arseneault et al, 2002). Health messages must be delivered with balance and care for it is too easy to stretch the credulity of target youth audiences with alarmist propaganda and blanket condemnations that do not reflect their own experiences. But action is needed to avoid a further burden on already overstretched mental health services.

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References

1. Andreasson S, Allebeck P, Engström A, et al. Cannabis and schizophrenia: a longitudinal study of Swedish conscripts. *Lancet* 1987;11:1483-5.
2. Arseneault L, Cannon M, Poulton R, et al. Cannabis use in adolescence and risk for adult psychosis: longitudinal prospective study. *BMJ* 2002;325:1212-3.
3. Arseneault L, Cannon M, Witton J, et al. The causal association between cannabis and psychosis: An examination of the evidence. *Br J Psychiatr* (in press).
4. Degenhardt L, Hall W, Lynskey M. Testing the relationship between cannabis use and psychosis. *Drug Alcohol Depend* 2003;71:37-48.
5. Hall W, Degenhardt L. Is there a specific “cannabis psychosis”? In: Castle DJ, Murray R, eds. *Marijuana and Madness*. Cambridge, UK: Cambridge University Press. (in press)