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The cannabis policy debate: finding a way forward

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In an ideal world social policies toward cannabis would be informed by epidemiological evidence on the prevalence of cannabis use and the personal harms that it caused and by evaluations of the costs and benefits of alternative social policies designed to minimize these harms. Policy should not be wholly decided by such evidence; it has to be appraised in the light of competing social values, such as individual liberty, public health and social order, a task performed by the political process in democratic societies. Nevertheless, the cannabis policy debate should be informed by the best possible epidemiological evidence on harms and by social policy evaluations. A paucity of both types of evidence is one obstacle to more evidence-based policies toward cannabis; the polarization of public and expert opinion about the harms caused by cannabis use is another.

Prevalence of use

Surveys indicate that cannabis is the most widely used illicit drug in many developed countries, with a substantial proportion of young adults in these countries having used cannabis at some time in their lives.[1] In jurisdictions where cannabis is prohibited, its use is generally discontinued by individuals when they are in their mid-to-late twenties.[2] Continued use is most common among those who initiate use early, are tobacco smokers and heavy alcohol consumers and have used other illicit drugs.[1]

The harms and benefits of cannabis use

There is a limited quantity and quality of epidemiological research on the health effects of cannabis. The old literature largely consisted of animal studies and human laboratory studies undertaken in the 1970s and 1980s,[3] before the discovery of cannabinoid receptors and the endogenous ligands.[4] The amount and quality of epidemiological research have increased in the past several decades, so we are now better informed than before about some of the health risks of chronic cannabis use. It is possible to describe the most probable adverse health effects of cannabis use,[5] although some of these are still controversial.

The main adverse acute psychological effects of cannabis intoxication are anxiety, dysphoria and panic, especially in naive users.[6] Cognitive and psychomotor impairment may occur while a user is intoxicated, and there is possibly an increased risk of accidental injury if an intoxicated person drives a motor vehicle or operates machinery.[6] At very high doses there may be an increased risk of experiencing psychotic symptoms; this may occur at lower doses among those with a personal or family history of psychosis.[7] There may be an increased risk of low-birth-weight babies if cannabis is smoked during pregnancy (Table 1).[8]

The main health and psychological effects of chronic cannabis use over many years are less certain because of the paucity of prospective and case–control studies.[9] The most probable adverse health effects appear to be respiratory diseases arising from regular cannabis smoking, such as chronic bronchitis[10] and squamous cell carcinoma of the head and neck and lungs.[11] Some heavy cannabis users develop cannabis dependence, characterized by a loss of control over cannabis use.[1,6] Some long-term heavy cannabis users may experience subtle cognitive impairment that may not be wholly reversed after abstinence.[12] People with schizophrenia may experience an exacerbation of psychotic symptoms (Table 1).[7]

There are also a number of possible adverse effects of chronic heavy cannabis use that remain to be confirmed by better controlled studies. These are an increased risk of cancers among the offspring of women who used cannabis during pregnancy and exacerbation of impaired immunity in people who are immune suppressed (Table 1).[6]

Some groups are at higher risk of adverse effects from using cannabis. Adolescents with a history of poor school performance may have their educational achievement further limited by chronic cannabis intoxication.[1] Adolescents who initiate cannabis use in their early teens are at higher risk of progressing to other illicit drug use and of becoming dependent on cannabis.[1,13] Pregnant women who smoke cannabis are probably at increased risk of giving birth to

Table 1: Summary of probable and possible acute and chronic adverse effects of cannabis use

Pattern of use	Adverse effect
Acute	
Probable	Anxiety, dysphoria, panic, cognitive impairment, psychomotor impairment
Possible*	Increased risk of traffic accident, psychosis, low-birth-weight infants
Chronic	
Probable	Chronic bronchitis, squamous cell carcinoma, dependence, mild cognitive impairment, exacerbation of psychosis
Possible*	Cancers in offspring, impaired immunity

*Possible but uncertain; confirmation required in controlled studies.

low-birth-weight babies and perhaps of shortening their period of gestation.[8]

People with a number of pre-existing diseases who smoke cannabis are probably at increased risk of exacerbating the symptoms of their diseases. These include individuals who have cardiovascular and respiratory disease[6] or schizophrenia,[7] those who are dependent on alcohol and other drugs[6] and those who have compromised immune systems (e.g., patients with AIDS and cancer patients receiving chemotherapy).[6]

Not all the effects of cannabis are adverse. Although some have argued that the toxic effects of cannabis preclude its medical use,[14] others argue that cannabis has considerable value in treating the symptoms of life-threatening and chronic illnesses.[15] Controlled clinical trials indicate that tetrahydrocannabinol (THC), the active principle of cannabis, may be useful as an antinausea agent and as an appetite stimulant in patients with AIDS.[6] Similar trials are required to assess the therapeutic value of THC and other cannabinoids as antispasmodic agents in people with multiple sclerosis and as analgesics in people with acute and chronic pain that is not relieved by existing analgesics.[6]

The cannabis policy debate

The widespread use of cannabis by young adults and the relatively modest public health impact of the most probable adverse effects on health have prompted some to advocate reform of criminal penalties for the use of cannabis.[15] The most commonly advocated option is the removal of penal sanctions for personal use and possession, sometimes called "decriminalization."[16] A less popular option is the legalization of cannabis use, possession and sale, along the lines of tobacco and alcohol.[16]

Some critics argue that any relaxation of criminal penalties for cannabis use will reduce deterrence and increase use.[17] They advocate an intensification of prohibition by allocating more societal resources to the legal system to heighten deterrence against use by increasing the perceived risk of arrest.[17] They would accompany this by mass media and school-based education programs to increase the perceived health risks and societal disapproval of cannabis use.[17]

In the United States this approach has led to the prosecution of recreational cannabis users who experience little or no harm and whose example is seen as encouraging others to use cannabis. Large fines and jail penalties have been imposed for cannabis use, drug testing has been encouraged in the workplace to deter cannabis use among future and current employees, school-based education of adolescents about the health risks of cannabis has been funded, and mass media campaigns have emphasized the health risks of cannabis and other types of illicit drug use.[15]

Intensified prohibition presupposes a societal consensus that increased law enforcement is the best means of achieving this goal. Whereas such a consensus arguably exists in the United States, it does not exist in Australia, for example, where public opinion is almost equally divided between those who favour the continuation of existing prohibition and those who favour liberalization of the law.[18] Moreover, among those who favour a continuation of prohibition, the majority prefer fines and noncustodial penalties to jail for first offenders.[18]

Evaluations of cannabis policy

There has been little evaluation of the costs and benefits of different cannabis policies. An international consensus on the prohibition of cannabis use has meant that only a narrow range of different policy approaches has been evaluated. These have involved marginal reductions in penalties for the possession of cannabis, such as the use of civil penalties in the United States in the 1970s, in Australia in the late 1980s and early 1990s and in the Netherlands in the mid-1970s and again in the 1980s.

According to certain evaluations, reductions in criminal penalties have not had any detectable effect on rates of cannabis use.[19–21] These evaluations typically involved secondary analyses of survey data on population cannabis use gathered for other purposes, and they have limited statistical precision.[19]

Two recent evaluations of cannabis policy in the Netherlands have come to different conclusions about its effects on rates of cannabis and other drug use. In the Netherlands cannabis use remains illegal, but under an "expediency principle" the police tolerate the sale of small quantities of cannabis in coffee shops in the larger cities.[21] Cohen and Sas[22] concluded from analyses of survey data that Dutch policies had not increased rates of cannabis use and had reduced rates of progression to other drug use in the Netherlands. MacCoun and Reuter,[21] in contrast, concluded that rates of cannabis use increased at a greater rate in the Netherlands than elsewhere in Europe and North America after cannabis sales were allowed in coffee shops.These conflicting interpretations reflect the limitations of *ex post facto* evaluations and the need for planned evaluations of cannabis policies.

In Australia proponents of intensified prohibition[17] have attributed the decline in rates of cannabis use in the United States between 1980 and 1992 to the effectiveness of such a policy. The effectiveness of US policies has, however, been questioned because cannabis use increased in the early 1990s after a decade of decline.[15] Even if we accept that the years of decline may be attributed to prohibition, the US approach is expensive, requiring substantial increases in resources for law enforcement, the criminal justice system and the correctional system.[15]

It is also difficult to believe, given the modest effects of alcohol and tobacco education,[23,24] that prevention strategies can do much more than nudge popular sentiment in the direction in which it is already moving. A recent RAND study of the value of drug prevention in reducing demand for cocaine suggests that the best preventive educational

programs are no more effective than street-based law-enforcement strategies.[24]

Given the limited evidence and the controversy over its interpretation, the public debate about cannabis policy in many English-speaking countries has been presented as a false forced choice between the following 2 options:[16] cannabis use is harmless and hence should be decriminalized (if not legalized),[15] or cannabis use is harmful to health and hence should be prohibited.[14] A rational discussion of the health risks of cannabis has been the first casualty; the consideration of even modest changes in penalties for personal use has been a second casualty. Policy stasis has been the consequence.

A way forward?

The public would be better served by debates about cannabis policy in which standards for appraising evidence of harm were used consistently.[25] Better public policy also requires investment in epidemiological research on the long-term health consequences of cannabis use[9,26] and in social and economic evaluations of the costs and benefits of current and alternative cannabis policies.[27] Epidemiological information on cannabis use could be collected in the course of other research, for example in prospective studies of adolescent development[13] and adult health.[28] The broader public health and social policy communities also need to become involved in the cannabis policy debate if society is to obtain assessments of the health effects of cannabis and the impact of different cannabis policies that are more independent of the legal debate. Cannabis policies are too important to be left to partisans of the false forced choices presented by the media in what so often passes for public debate on this subject.

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