Cannabis- the debate continues: a South African perspective

Charles Perkel
Psychiatrist in Private Practice, Johannesburg, South Africa

Abstract
In South Africa cannabis is cheap, easily available and easy to grow. There is an old tradition of use that predates modern laws, and little evidence to show that such laws have altered use patterns at all. Yet research shows us that cannabis is not harmless. How much so remains a tough question to answer. To debate the issues of decriminalisation is to acknowledge the failures of the legal approach to cannabis in South Africa. It is not the same as legalization and it does not assume that cannabis is without dangers.

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Dagga, a South African name for Cannabis Sativa, derives from the Khoikhoi word Dachab. Cannabis is not indigenous to southern Africa, having probably been introduced into the Mozambique area in pre-colonial times by Arab traders many centuries ago. It was adopted by the Khoikhoi as a valued intoxicant & herbal remedy that was chewed or boiled, and was traded from the Xhosa communities living in the eastern parts of South Africa. The smoking of it began after the introduction of the smoking pipe by the European Colonialists.[1]

It wasn't until 1928, when South Africa formulated the Medical, Dental and Pharmacy Act, No. 13, that cannabis became illegal. In 1954 this Act was amended to increase the penalties, and possession of more than 113g of cannabis was automatically considered as dealing. In 1971 the Abuse of Dependence-producing Substances and Rehabilitation Centres Act, No. 41 made the usage of cannabis punishable with a maximum penalty for first conviction of up to 10 years imprisonment, and dealing, up to 15 years. In 1992 the Drugs and Drug Trafficking Act, No.140 of 1992 made usage punishable for up to 15 years imprisonment, and dealing, up to 25 years.[2] This resulted in the criminalization of cannabis and cannabis use in South Africa, and the lumping of it (a 'soft' drug) together with other illicit ('hard') drugs, so-called 'dangerous dependency producing substances'.

Between 1991 and 2000 the South African Narcotics Bureau arrested 33 814 people for possession of cannabis, and 59 539 for dealing. In the month of February 2002, 4 613 people were imprisoned for possession, and 1 407 for trade in cannabis.[3]

Despite this law enforcement, South Africa is among the top 4 cannabis producers in the world according to Interpol, with estimates of 1 000 to 1 200 hectares of land being used to cultivate it. The South African Narcotics Bureau reported 495 927 905 kg of cannabis seized during 2001. In 2000 almost a quarter of the cannabis seized worldwide was seized in Africa, mainly in South Africa.4 Most of the cannabis seized in the UK, and a third of that seized globally, is now of South African origin.[5]

Cannabis is the illicit drug of choice in South Africa, according to community surveys. In surveys of high school students, cannabis has the second most common lifetime prevalence rates, after alcohol. For example, in a 1997 representative sample of 2 030 grade 11 students in Cape Town, lifetime rates of 32% in males and 13.1% in females were reported for cannabis use. A 1999 survey of rave party attenders in Johannesburg and Durban (mean modal age 22 and 18 respectively) found lifetime prevalence rates of 81% for cannabis use, with 68% saying they used it daily.[6] In an anonymous self-reported questionnaire in rural KwaZulu-Natal of 1 318 grade 10 pupils where substance use rates would be considered lower than in urban areas, 16.9% males and 2.3% of females reported using cannabis.[7] These findings are in keeping with findings in other countries. For example, 2 surveys done in 1995 reported 42.6% of Australians age 19-28 and 26.5% of Americans age 20-29 had used cannabis in the past 12 months[8], and 12% of Hollanders in 1991 reported using cannabis at least once in their lives with the peak of current use between 16 and 24 years.[9]

Statistics gathered from specialist substance treatment centres also reflect the predominance of cannabis in South Africa. For example, between July and December 2003, 20-24% of patients in various substance treatment centres scattered across South Africa reported cannabis to be their primary drug of abuse, their average age being 20-21 years. This does not include those whose primary substance of abuse is 'Mandrax', the uniquely South African com-

Correspondence:
Dr Charles Perkel, PO Box 65444, Benmore, 2010, South Africa
email: perkx@iafrica.com

bination of crushed Methaqualone, which is always smoked together with cannabis, and comes in as the third most common primary substance after cannabis and alcohol. When one separates out those below age 20, cannabis is the primary drug of abuse in South Africa for which treatment is sought.[10] These figures are similar to those in the US where in 1999 14% of publicly-funded treatment admissions were for cannabis, with two thirds of cannabis-related admissions below the age of 25 years.[11]

Although methodologies differ in different surveys, cannabis is the most common illicit substance used in South Africa, in keeping with world trends, with particularly high use among the youth. Unfortunately policy and approach to this issue remains quagmired in politics and emotion, with little cognizance of evidence-based findings. I wish to explore further some of these findings as they apply to the debate around cannabis.

Decriminalisation

In 1978 President Carter told the United States Congress that "penalties against the use of a drug should not be more damaging to an individual than the use of a drug itself; and where they are they should be changed. Nowhere is this more clear than in the laws against the possession of marijuana."[12]

A draft paper commissioned by the Central Drug Authority guiding South Africa's cannabis policy in the National Drug Master Plan for 2004-2009 maintains the proscription on cannabis. One lead author, Dorothy Malaka, was quoted in the Sunday Times of September 12 2004 as saying that "the effects of it (decriminalisation) have not yet been tested."

Decriminalisation refers to the removal of criminal penalties for possession of a drug. The term is somewhat confusing as it has been applied to countries where cannabis possession is still subject to a fine (for example in certain US states and Australia) as well as to countries where it is legal to possess up to certain prescribed amounts for personal use (for example in Holland). Decriminalisation is very different to legalization, where production and sale would be permitted, and so far no country has legalized cannabis. Supporters of decriminalisation vary from those who see cannabis as a harmless and even therapeutic herb, to those who agree that it is a problematic substance but believe that the adverse consequences of criminalization also need to be factored in formulating health policy.[13] The latter argue that the policing of criminalization uses scarce resources and clogs up the justice system reducing resources for more serious crimes (very relevant in South Africa with clogged courts and prisons); stigmatizes and handicaps those arrested; fosters a massive illegal and unregulated market; lumps cannabis with other illicit drugs; and brings consumers into direct contact with sellers of 'hard' drugs. Moreover they argue that changes in rates of cannabis use have little to do with fear of engaging in an illegal activity or with availability, and much to do with changing perceptions of health risk. Despite legal proscription, 60% of Americans reported that it was 'fairly' or 'very' easy to obtain cannabis throughout the 1990s. It is probably even easier to obtain in South Africa. Supporters of decriminalisation argue that criminal policies simply do not seem to be working. Antagonists of decriminalisation argue that cannabis is a harmful substance, that use will escalate, and that it would be impossible to regulate. Some fear that decriminalisation of cannabis would lead to liberalization of policies regarding other illicit drugs.[8,14]

The effects of decriminalisation have been studied in a number of countries. Most studies reveal no greater increases in cannabis use after decriminalisation compared to control areas or countries.[8,9] One explanation for this is that cannabis markets are already saturated. Indeed, trends in cannabis use have evolved independently from drug policy, with recent studies suggesting that the US, cited as the prototypical example of a prohibitionist approach consumes more cannabis per capita than the Netherlands, cited as the prototypical example of antiprohibitionist.[9,13] Dutch policies may also have had some success in separating out cannabis from 'hard' drug markets, keeping in mind that although almost all hard-drug users have used cannabis, the vast majority of cannabis users have not used hard drugs.[13]

Thus, in all countries where cannabis possession laws have been relaxed, there has been no evidence of an associated significant increase in use.

And the risks?

Considering that decriminalisation seems to have little impact on use trends, one could conclude that resources may be better spent on education than law enforcement. But what should we be telling South Africans, particularly the youth, about the risks of cannabis use? Many young people see cannabis as mere 'background noise', their equivalent of an afternoon sundowner. What do we know about the risks?

As for intoxication

Over the past 20 years plant breeding techniques have been used to greatly increase the potency of cannabis. In the 1970s an average joint contained 10mg of THC, compared to 150mg currently in a joint of some of the more potent species.[15] South African cannabis was already in 1980 among the world's more potent variants.[16] The effects of THC are dose related, and thus some of the older research may not be currently relevant. THC is also highly lipid soluble with accumulation in fatty tissues, resulting in a tissue elimination half-life of up to 7 days, and complete elimination up to 30 days. Thus regular users can build up significant THC levels in their bodies which may continue to reach their brains, even in prolonged abstinent periods.[15]

The acute risks of intoxication are small compared to other substances (including alcohol). The biggest concern is the acute effects on cognitive and psychomotor performance, which is dose related. Not surprisingly cannabis is the most common drug apart from alcohol to be detected in drivers involved in fatal accidents or stopped for impaired driving in many countries.[15] One study conducted by the CSIR in conjunction with the Department of Transport in South Africa found that 15% of 400 professional drivers tested at various points on national roads tested positive for cannabis.[17] It is unclear to what degree cannabis intoxication may increase driving risk, and to what degree these impairments are cumulative with other substances like alcohol. One interesting American study looked at this question by testing nine licensed pilots in a flight simulator after smoking a joint containing 20mg THC (a light joint by today's standards). They demonstrated significant deterioration in performance, which improved but still remained impaired 24 hours later. Of special concern was the finding that 24 hours later most of these pilots were unaware of their residual impairments.[18]

Cannabis and crime have been linked. Between one-quarter and one half of 1 050 arrestees tested positive for cannabis in a 2 month study in various police stations across South Africa in 2000.[19] Cannabis and trauma have also been linked in a study of 139 trauma patients below age 20, conducted from 1999 to 2001, with 26.9% in Cape Town and 44.4% in Durban testing positive for cannabis.[6]

Interpreting this association is problematic and may: represent patterns of use in the background communities; reflect common underlying factors that create vulnerabilities to cannabis use and crime/trauma; implicate cannabis in some way. Further research is needed.

Cannabis CB1 receptors are expressed at high densities in the hippocampus and it is well established that acute intoxication impairs short-term memory, particularly when attention is important, and also effects spatial learning tasks and more complex learning and information processing.[20] Such impairments may persist for up to a week after last cannabis use because of the persistence of THC in the body and, for those who smoke regularly, such impairments may last weeks after last use.

The gateway debate

The gateway hypothesis remains a controversial theory which has been debated for years, and which states that cannabis use particularly in adolescence creates a vulnerability to the use and abuse of 'heavier' drugs. Many have interpreted this association to be based on personality and social factors: that nonconforming adolescents are attracted to cannabis and equally to other drugs, and that cannabis users are pushed by law into the realm of illegal drugs where they will make contact with users and sellers of other drugs.[21] As stated above, Dutch coffee-shop policies may support the latter idea.

However there may be more to the gateway theory. An Australian cross-sectional survey of 311 young adult monozygotic and dizygotic same sex twins median age 30 years who were discordant for cannabis use below age 17 years, found that the twin who had used cannabis had odds between 2.1 and 5.2 times higher than their co-twin (who hadn't used cannabis) of having alcohol dependence, and other drug use, abuse or dependence. There was no difference between monozygotic and dizygotic twins. Because environmental and genetic factors are controlled for in this study, other factors must come into play. The authors concluded that these factors could include pleasurable or safe experiences with cannabis increasing the desire to try other drugs, or coming into contact with users of other drugs.[11]

There is another potential explanation which raises concern. There is a possibility that repeated exposure to cannabis, particularly in adolescence, may over time sensitize the brain reward system, increasing the pleasurable responses to other substances when tried, and accelerating the process of loss of control. Drugs of abuse activate dopamine neurons in the brain reward system, and THC has been shown in animal studies to do this too. Chronic cannabis administration in rats has been shown to produce cross sensitization to the locomotor effects of psychostimulants and opioids.[22] This may occur through interaction of cannabis CB1 receptors with the opioid system in the brain.[23] This sensitization is central to the theory of control loss that occurs in all addictions, a progressive dysregulation of reward circuits which influences a growing desire for more drug and a decreasing control. Cannabis, like other abused substances, is implicated.[24]

Thus there is evidence that the gateway idea may indeed be a valid concept especially for the youthful cannabis user, and probably goes beyond social factors.

Is it addictive?

In discussing the gateway theory let us not forget that cannabis use can also become a gateway to potential chronic abuse and dependence of itself. For many years cannabis was not considered addictive, and clearly it lacks the intense withdrawal syndrome of other drugs. Furthermore, self-administration of THC by animals has been achieved only recently and with difficulty, but it has indeed been achieved. Animal studies have been used to demonstrate the development of cannabis tolerance, dependence, and withdrawal. Common to withdrawal syndromes from all drugs is an inhibition of mesolimbic dopaminergic activity, and an elevation of extracellular corticotrophin releasing factor (CRF) levels.[24] This has been demonstrated in rodent THC withdrawal studies.[22]

A criticism of these animal studies has been around their use of very high equivalent doses of THC, and thus the importance of human studies. Careful controlled studies have identified a withdrawal syndrome in people who use cannabis on a near daily basis, and withdrawal symptoms include craving, decreased appetite, sleep difficulties, weight loss, irritability, restlessness and strange dreams.[25] Though minimal physical withdrawal symptoms exist, the behavioural and emotional withdrawal symptoms may contribute to reinforcing effects, dose escalation and undermining of abstinence attempts. How often and how much to produce such effects is a difficult question to answer, but at least one author has suggested that a daily oral dose of 180mg THC (one or two good quality joints) for 11-21 days is sufficient to produce a withdrawal syndrome.[26]

Of the many who try cannabis, only a small proportion will go on to heavier use. What defines that risk? Not surprisingly, early adolescent positive subjective responses to cannabis strongly predict later dependence by a factor of 20 times higher than those who don't experience such positive responses, and that such responses may be genetically predetermined.[27] Genes appear to account for about half the risk variance for cannabis dependence. For example, a sample of 6 265 cannabis smokers in Australia identified that 44.7% of the variance in liability to cannabis dependence was accounted for by genetic factors.[28] A New Zealand prospective longitudinal study at ages 15, 18 and 21 years, has come up with estimates of between 13% and 16% of adolescent cannabis users being at risk of cannabis dependence by their early 20s.[29] Frequency of use in adolescence is also associated with progression to dependence, with an Australian study defining weekly use as marking a threshold of risk for later dependence.30 A 19-year American follow-up study of 706 cannabis users followed from ages 15-16 to 34-35 identified frequent use, starting early, use of other illicit drugs, and using it to alter mood, as being associated with chronicity of use. Use for social reasons increased the odds of stopping.[31]

Research shows us that cannabis can be dependency producing and that certain young individuals are at particular risk.

Brain toxicity

How much concern need we have about the brain toxicity of regular use of cannabis, and is there evidence of cumulative or permanent toxicity? A long and heated debate has raged around the potential neurotoxicity. Researching this subject presents certain problems because of the long life of cannabis in the body, which means that cognitive tests may be measuring intoxication or withdrawal. There is little evidence of histopathological changes, cerebral atrophy or regional changes in animal and human studies.[20] However CB1 receptors are well represented in the hippocampus, and chronic (but not acute) administration of drugs of abuse, including opiates, ethanol, and THC, has been shown in animal studies to decrease hippocampal function as well as decrease the number of new cells born in the dentate gyrus, decreasing adult hippocampal neurogenesis.[32]

A number of studies have assessed cognitive functioning in

chronic users, and even when dysfunction has been found, it is relatively subtle. An American study comparing 51 long term users (mean 23.9 years of use) to 51 shorter-term users (mean 10.2 years of use) all with median abstinence 17 hours, to 33 nonusers, found generalized memory deficits only in the first group with impaired learning, retention, and retrieval. The authors concluded that memory and attention problems worsen with increasing years of use, and that they may only be detectable by standard tests after 10-20 years of use (though such problems may be manifesting before that at a subtle level).[33] Another American study looked at cognitive functioning after 28 days abstinence in a group of chronic smokers in their early 20s who had smoked for at least 2 years, dividing them into a heavy group (78-117 joints per week), a middle group (18-70 joints per week), and a light group (2-14 joints per week). Performance was mostly not clinically abnormal, but there were differences between the 3 groups particularly with regard to memory, executive function, and manual dexterity, again functions associated strongly with the hippocampus. The authors concluded that these finding are akin to normal age-related decline that occurs in the elderly.[34]

Puberty is a time of particularly heightened brain maturation, including the brain reward system. This may create a heightened vulnerability to the toxic effects of drugs including cannabis with early teen use[35], and this has been looked at. A German study looked at 99 young adult pure cannabis users compared to 49 controls, and measured visual scanning as a reflection of attentional function. They found that cannabis use before age 16 had subtle effects on visual scanning in early adulthood.[36] Another study utilized 57 cannabis using subjects (no controls) and did MRI and PET scanning. They found that those who started using cannabis before age 17 had a slightly lower percentage of cortical gray matter compared to those starting later, and the males had greater cortical blood flow. These findings did not relate to duration of use.[37]

Thus earlier onset as well as duration and heaviness of use have been associated with subtle cognitive problems, particularly in memory and attention. How this applies to lighter smokers, and whether brain changes are chronic or permanent, is still to be answered.

Cannabis and psychosis

Related to neurotoxic concerns are concerns about psychiatric toxicity. There is a well established association between cannabis use and schizophrenia, with rates of cannabis use being about twice as high in schizophrenics compared to the general population.38 However the causality of this association has been difficult to define. This association has three possible explanations: firstly that of self-medication or other risk factors in people with psychotic illness that predisposes them to use cannabis; secondly, that there may be common underlying risk factors for both psychosis and cannabis use; thirdly, that cannabis is directly or indirectly a causative agent for psychosis. It is well established that cannabis intoxication can lead to an acute transient psychosis and, in those with pre-existing psychotic illnesses, it can cause an exacerbation or recurrence of psychosis.[39,40] It has been very difficult to prove that cannabis is a causative agent for chronic psychosis and schizophrenia, though a number of studies are showing causal links of sorts.

The Dunedin study in New Zealand has followed a cohort of 1 037 individuals born in 1972-3 and re-assessed at age 26. The study showed that people who used cannabis by age 15 had a greater risk for schizophrenia than those who used by age 18, that this risk was specific to cannabis use (not other drugs), and that though most young people used cannabis in adolescence without harm, a vulnerable minority were at risk. A tenth of their sample who had used cannabis by age 15 developed schizophreniform disorder by age 26 compared with 3% of their remaining cohort.[41]

A Swedish cohort of 50 087 men 18-20 years old conscripted in 1969-70 and followed for 27 years showed that early adulthood use of cannabis was associated with a greater risk of developing schizophrenia. The risk increased in a dose dependent manner, was not influenced by other drug use, and was not explained by shared risk factors (such as personality traits). They concluded that 13% of cases of schizophrenia could be prevented if cannabis use was eliminated, and that those with schizophrenic risk factors were particularly vulnerable.[42] However, occasional use was still associated with very few harmful effects, and indeed an earlier analysis of this cohort had concluded that even with very heavy cannabis use, only 3% went on to develop schizophrenia, with a relative risk of 2.3.[39]

The Netherlands Mental Health Survey and Incidence Study (NEMESIS) of 4 045 psychosis-free individuals and 59 with psychotic disorders, who were assessed 3 times between 1996 and 1999, found that cannabis use at baseline increased the risk for psychosis by almost three times, and was a poor prognostic indicator for those with an established vulnerability.[43]

Another Dutch study in the Hague looked at all first-contact male psychotic disorders between 1997-99 (there were 133) and interviewed them again 2.5 years later. They found that the use of cannabis was associated with a much earlier onset of schizophrenia (a 7 year age difference). One potential interpretation of this is that some of these individuals may never have developed schizophrenia without cannabis use.[44]

Overall, cannabis confers a twofold increased risk for schizophrenia, and those with younger age of onset of use and with other psychotic risk factors are particularly vulnerable.[39] Whether in fact some cases of schizophrenia could have been prevented if cannabis use had been eliminated, is still to be proven.

Cannabis and depression

Cannabis use and depression has been even more difficult to study than cannabis and psychosis. A recent extensive review of this issue concluded that cannabis use and depression co-occur more often than can be expected by chance, and that there is an increased chance of depression among heavy users.[45] Again causality has been difficult to show, as this association may arise due to self-medication with cannabis or to cannabis toxicity.

The Baltimore Epidemiologic Catchment Area study sampled 3 481 individuals in 1980, and followed up with 1920 individuals of this sample between 1994 and 1996. The study found that those at baseline with cannabis abuse and no depression were four times more likely to have depressive symptoms 14-16 years later than those without cannabis abuse at baseline, with a higher likelihood of anhedonia and suicidal ideation. Of interest as well was that depressive symptoms at baseline with no cannabis abuse did not predict later cannabis abuse. Confounding factors, including other substances, were ruled out. The author concluded by reinforcing the importance of cannabis abuse prevention.[46] A further analysis of these findings has suggested that 1.9% of depressive symptoms that developed over 15 years could be attributed to cannabis abuse-still a very minor role.[45]

An Australian study in the state of Victoria sampled 1 601 students aged 14-15 and followed them for 7 years. They found that daily use of cannabis was associated only in women with a four-

fold increase in risk of depression and anxiety at 20-21 years, and weekly use a twofold increase in risk. Depression and anxiety did not predict later cannabis use.[47]

The explanation for this causality is still not known. One possibility is that cannabis has a cumulative toxicity that predisposes to later depression, though there is little evidence so far to show this. A second possibility is that the depressogenic effects may be socially mediated, and a number of studies have shown that early onset cannabis use is associated with reduced educational attainment, more unemployment and crime. Depression as a cause of later cannabis abuse has failed to be proven.[45]

Amotivational syndrome

A cannabis-induced amotivational syndrome has long been cited by parents and health care professionals alike as a good reason not to smoke cannabis. This idea has been little studied and remains controversial. It was described over 20 years ago as personality deterioration accompanied by loss of energy and drive to work, and may represent nothing more than chronic intoxication in heavy cannabis users.[40] Another possibility is that amotivation may be associated with chronic subclinical levels of anhedonia in cannabis abusers, in keeping with higher rates of depression in this population.[46]

If amotivation is a valid concept in cannabis use, then one would expect the attributes of long term users to differ from controls. This has been looked at in an Amercian study of 108 long-term heavy users who had smoked cannabis between 5000 and 18 000 times, and 72 controls who had smoked cannabis between one and 50 times in their lives, all aged 30-55 years. They found no significant differences in the reported income and education between the families of origin of the two groups, but striking differences in these factors between the two groups of subjects themselves. Heavy users reported significantly lower levels of educational attainment, income and life satisfaction. These differences remained after adjusting for premorbid variables, indicating a possible effect of long-term use rather than chronic use being caused by pre-morbid traits.[48]

Physical health dangers

Both cannabis and tobacco produce about 4000 chemicals when smoked which are largely identical. Smoking cannabis entails a two thirds larger puff volume than tobacco, a fourfold longer inhalation, and a fivefold increased concentration of carboxyhaemoglobin. Cannabis has a higher combustion temperature than tobacco. In addition, most cannabis smokers mix it with tobacco, and do not use a filter. Chronic use has been associated with chronic bronchitis, emphysema, and other lung diseases at a younger age than cigarette smokers, as well as a risk for bullous lung disease in young people. Malignant changes in the respiratory tract have been reported as well as rare oropharyngeal cancers in young people, and a 4.2 times increased risk of myocardial infarction within an hour of smoking cannabis. Three to four cannabis joints are equivalent to 20 or more tobacco cigarettes in terms of negative lung effects.[15,49,50]

Pregnancy and cannabis

Confounding factors and research difficulties have made it tough to study the effects of cannabis use by a pregnant mother on her unborn child. In a review of this subject, the authors concluded that during toddler stage there was little evidence of a prenatal cannabis effect upon growth or behaviour. However after age 3 there is some evidence of cognitive effects on executive functions, particularly attention, impulsivity, and problem solving involving visuoperceptual skills. These problems point to potential frontal lobe deficits that may only manifest as the brain matures.[51]

A study of 31 18-22-year-olds from the Ottawa Prenatal Prospective Study that has followed individuals from birth, using cognitive testing and functional MRI, found that with increased prenatal cannabis exposure there was an increase in neural activity in bilateral frontal cortex and right premotor cortex during response inhibition, and these individuals had more commission errors than controls.[52] In other words, these individuals exposed 18-22 years earlier in-utero, showed cerebral flow and cognitive differences to controls.

Any use in pregnancy should be strongly discouraged.

Conclusion

Current laws do not work: they snarl up already overwhelmed resources, they criminalize cannabis smokers and tie cannabis to 'heavier' drugs, and they have little deterrent effects. People decrease their cannabis use based on health-risk perceptions rather than fear of being caught, but clearly many users seem to use it without problem or progression. And defining the whole cannabis debate by the small percentage of heavy and problematic users is similar to defining alcohol by alcoholism. Research certainly helps us to define risk groups: those that use it heavily, particularly if the use is chronic; those that begin use in adolescence; and those that use even small amounts and have vulnerabilities to mental-health problems.

Rather it acknowledges the need to find evidence-based approaches to protecting those at risk particularly adolescents, as well as the need to continue to monitor closely the ongoing patterns and problems of use. And to continue to research the question relevant to the majority of cannabis users in South Africa: whether there can be such a concept as safe use.

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