

Decriminalization of Marijuana: Is this a Realistic Public Mental Health Policy for Jamaica?

WD Abel, C Sewell, D Eldemire-Shearer

ABSTRACT

Marijuana has potential benefits and adverse effects. Despite its popularity in Jamaica, decriminalization may not be possible given the international and regional obligations of Jamaica.

Keywords: Decriminalization, Jamaica, marihuana

¿La Despenalización de la Marihuana: ¿Una Política Realista para la Salud Mental Pública en Jamaica?

WD Abel, C Sewell, D Eldemire-Shearer

RESUMEN

La marihuana tiene beneficios potenciales y efectos adversos. A pesar de su popularidad en Jamaica, la despenalización puede no ser posible dado las obligaciones internacionales y regionales.

Palabras claves: Despenalización, Jamaica, marihuana

West Indian Med J 2011; 60 (3): 367

Marijuana, also referred to as cannabis and ganja, is a derivative of the cannabis plant. The cannabis plant exists as three recognized species, *C sativa*, *C indica* and *C ruderalis*. These species contain over 420 chemicals including numerous metabolites, many of which are toxic. The principal constituents of cannabis are delta-9-tetrahydrocannabinol (D9-THC) and cannabidiol (1). The former has been identified as the main psychoactive ingredient and in experimental studies has been shown to produce transient psychotic symptoms and impaired memory in a dose-dependent manner. Cannabidiol, on the other hand, does not induce hallucinations or delusions, and it seems to antagonise the cognitive impairment and psychotogenic effects caused by D9-THC (2, 3).

The earliest documented use of marijuana by man dates back to 2737 BC (4). The drug was introduced into Jamaica by indentured workers from India in the mid-nineteenth century, hence the use of a Hindi word for the local name for marijuana, namely ganja. Through the Indians, the use of

ganja spread to the lower socio-economic classes of society that was dominated by the black section of the population (5).

Today, marijuana is the most widely used illicit substance with an estimated use by 160 million or approximately 4% of the world's population. The reported prevalence in Jamaica is said to be 9.9% (6). Marijuana use includes those for recreational, work enhancing, social, religious/sacramental and medical purposes (7).

Marijuana is subject to international control and to date most countries have acceded to international conventions (1961 Single Conventions on Narcotic Drugs, 1971 Convention on Psychotropic Drugs and the 1988 Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances) which renders it illegal in most countries to consume, use, possess, cultivate, transfer or trade (6). Jamaica is a signatory to these international conventions and has instituted local legislations to support its international obligations thereby rendering marijuana illegal. In addition, there are regional obligations such as those enshrined within the certification process which was enacted by the United States of America (USA) in 1986, which requires countries such as Jamaica, designated as major drug transit or illicit drug producing countries, to implement counternarcotics measures, cooperate with anti-narcotics efforts of the USA and meet the terms of international conventions. Arguably, a failure to implement the terms of these conventions would result in

From: Department of Community Health and Psychiatry, The University of the West Indies, Kingston 7, Jamaica.

Correspondence: Dr WD Abel, Department of Community Health and Psychiatry, The University of the West Indies, Kingston 7, Jamaica. E-mail: wendelabel@hotmail.com

sanctions that could have possible diplomatic and economic implication (8).

With the increasing popularity of the drug and the emergence of strong advocacy, several countries worldwide and 13 states within the USA have instituted varying decriminalization policy on marijuana use. Decriminalization is a policy, juxtaposed between public health and security; it is designed to reduce the demand for drugs and involves the removal, reduction or non-enforcement of penalties for the sale, purchase or possession of the drug. Under this policy, the illegal status of the drug is enforced, minor offenses are punishable by civil fine penalties and not treated as criminal offenses. The cultivation, trafficking, sale and distribution to minors are subject to criminal law (6). Noteworthy, in 2011, California further enacted a law which reduced the possession of up to one ounce of marijuana for private, personal use from a misdemeanor to an infraction.

In 2001, the Jamaican government appointed a commission to review the decriminalization of marijuana (ganja) so as to inform policy. The recommendations made *inter alia* were: to amend laws to decriminalize ganja for the private, personal use of small quantities by adults and decriminalization for use as a sacrament for religious purposes (9).

The debate on marijuana decriminalization policy has become a vexed and contentious issue laden with contradiction and controversies. Proponents of decriminalization emphasize that marijuana is a safe drug with beneficial health effects and that decriminalization results in considerable savings to the criminal justice systems. On the other hand, opponents of decriminalization highlight the adverse health effects associated with the drug, the potential for dependence, the possible increase in drug use and other negative socio-economic impact.

This paper examines the literature in terms of the potential beneficial and adverse effects of marijuana and reviews current decriminalization policy on marijuana. Additionally, it explores the possible barriers to, and the implications of implementing a decriminalization policy in Jamaica.

Beneficial effects

Several potential health benefits have been cited in the literature. Marijuana has been associated with the management of pain, nausea, vomiting and glaucoma (10). The treatment of pain and nausea was among the first recorded use of cannabis in the Chinese Pharmacopoeia (11). Subsequently, pain has continued to be cited both in past and more recent scientific literature as an indication for the use of cannabis preparations (12, 13). The past 30 years has seen an increasing number of anecdotal reports of effective cannabis use for chronic pain, along with increasing evidence of a system of receptors and ligands which are specific for cannabinoids.

Cannabis has also been used in the prevention of nausea and vomiting associated with anti-cancer drugs. Some studies have indicated that cannabinoids are slightly better than conventional anti-emetics for treating chemotherapy-induced vomiting, and are preferred by the patients who use them (14). Several studies have also shown that smoked or orally administered cannabis as well as intravenous infusions of delta-9-THC can decrease intraocular pressure and hence are effective in treating glaucoma (15).

Adverse health effects

The most consistent evidence to date that suggest adverse effects associated with cannabis include dependency, increased risk for motor vehicle accidents, the impact on mental health and cardiorespiratory problems (16). The dependency associated with cannabis is thought to be moderate rather than severe and is estimated to occur in one of every nine users (17). Research has shown that early marijuana use in adolescent may lead to a decline in psychosocial functioning and cognitive impairment (18). Specifically, early users may have changes in executive functions, such as attention and working memory, and in hippocampus-dependent learning and memory (19).

Cannabis is also implicated in the earlier onset of psychosis (20). Cannabis use is a modest statistical risk factor for the emergence of psychosis, ranging from psychotic symptoms such as hallucinations and delusions to severe mental disorders such as schizophrenia. Prospective studies have shown that cannabis use is associated with a doubling of the risk of later schizophrenia outcomes. Early, adolescent-onset cannabis use is associated with a higher risk of developing schizophrenia as well (21). The belief is that persons who begin to use cannabis while the brain is still developing are more susceptible to its negative impact (22–25). Long-term marijuana use may affect an individual's short term memory, concentration, attention, problem solving and motivation. In particular, cannabis use before age 15 years is associated with poorer cognitive performance. This again is suggestive that the impact of cannabis on cognition might depend on the age at which the use of the drug began (22).

Despite these findings, the literature on the adverse health effects associated with marijuana is very conflicting as establishing causal relationship is difficult and evidence from more rigorous scientific studies in humans is required. The proponents of decriminalization indicate that alcohol and tobacco use is associated with greater morbidity and mortality and a greater socio-economic cost, thus arguing that current policies on marijuana are inconsistent.

Implication for drug use

A trawl of the literature reveals that decriminalization of marijuana does not result in increase in use (26). MacCoun

et al reported that the decriminalization of marijuana in the Netherlands and other countries was not associated with increase use in marijuana and other illicit substances (27). Similar findings were reported on the decriminalization policy elsewhere (28–30).

Johnston *et al* reported that decriminalization of marijuana did not impact on students' attitude and their use of the drug (31). This is consistent with findings reported by McGeorge and colleagues among university students (32). Many researchers have asserted that marijuana use increases the risk of future use of other illicit substances (33).

Impact on the criminal justice system

The Office of Narcotic Control in the USA, in a report published in 2003, estimated a cost of 29 billion dollars to the criminal justice system in the USA attributed to incarceration and the adjudication of cases (34). On the other hand, decriminalization has been shown to result in substantial reduction in costs to the criminal justice system (35).

As it pertains to the impact on crime, the literature is very conflicting. Several studies have reported strong correlation between marijuana use and crime (36). However, other studies have failed to establish a link between decriminalization and increased crime (37).

Is decriminalization possible?

Arguably, the real obstacle lies in the fact that Jamaica is a signatory to several international and regional conventions and in addition to this there are several local laws which would have to be reviewed and amended. Several legal scholars including Harding have suggested that it is possible for Jamaica to decriminalize marijuana as has been done in other jurisdictions (38). However, concerns remain that if these recommendations were to be implemented, and local laws amended to decriminalize the private, personal use of marijuana in small quantities, Jamaica would, in all likelihood, be in breach of certain regional obligations in respect of drug control and it would be in violation of the terms of the USA certification process.

CONCLUSION

Notwithstanding its popularity and given the uncertainty concerning its adverse effects, marijuana still remains a public health concern. Countries like Jamaica are obligated to cooperate with international and regional drug control strategies. Despite the recommendations made for decriminalization, it is unlikely that this will be adopted into policy in Jamaica. Further research is, however, needed to ascertain the impact of the drug on the Jamaican population and a more comprehensive drug control policy should be adopted to include more prevention, treatment and other harm-reduction strategies.

REFERENCES

- Murray MR, Morrison PD, Henquet C, Di Forti M. Cannabis, the mind and society: The harsh realities. *Nat Rev Neurosci* 2008; **8**: 885–95.
- Di Forti M, Morgan C, Dazzan P, Pariante C, Mondelli V, Marques TR et al. High-potency cannabis and the risk of psychosis. *BJ Psych* 2009; **195**: 488–91.
- D'Souza DC, Perry E, MacDougall L, Ammerman Y, Cooper T, Wu YT et al. The psychomimetic effects of intravenous delta-9-tetrahydrocannabinol in healthy individuals: Implications for psychosis. *Neuropsychopharmacology* 2004; **29**: 1558–72.
- Aldrich M. History of therapeutic cannabis. In: Mathre ML, ed. *Cannabis in Medical Practice: A Legal, Historical and Pharmacological Overview of the Therapeutic Use of Marijuana*. Jefferson, North Carolina: McFarland & Company, Inc; 1997.
- Boekhout van Solinge T. Ganja in Jamaica. *Amsterdams Drug Tijdschrift* 1996; **2**: 11–14.
- World Drug Report 2010. United Nations Office on Drugs and Crime, Vienna.
- Russo EB. History of cannabis and its preparation in saga, science and sobriquet. *Chemistry and Biodiversity* 2007; **4 (Suppl 8)**: 1614–48.
- International Narcotics Control Strategy Report, 2010. United States Department of State. Bureau for International Narcotics and Law Enforcement Affairs.
- Report of the National Commission on Ganja. Kingston, Jamaica: 2001.
- Aggarwal SK, Carter GT, Sullivan MD, ZumBrunnen C, Morrill R, Mayer JD. Medicinal use of cannabis in the United States: Historical perspectives, current trends and future directions. *J Opioid Manag* 2009; **5 (Suppl 3)**: 153–68.
- Russo E. Cannabis for migraine treatment: The once and future prescription? An historical and scientific review. *Pain* 1998; **76**: 3–8.
- Culpeper N. The English Physician: or An Astrologo-Physical Discourse of the Vulgar Herbs of this Nation. London: Peter Cole. Cited in: Hosking RD, Zajicek JP. Therapeutic potential of cannabis in pain medicine. *Br J Anaesthesia* 2008; **101 (Suppl 1)**: 59–68.
- Kalant OJ. Report of the Indian Hemp Drugs Commission, 1893–94: A critical review. *Int J Addict* 1972; **7**: 77–96.
- Tramèr MR, Carroll D, Campbell FA, Reynolds DJM, Moore RA, McQuay HJ. Cannabinoids for control of chemotherapy induced nausea and vomiting: Quantitative systematic review. *BMJ* 2001; **323**: 1–8.
- Kumar RN, Chambers WA, Pertwee RG. Pharmacological actions and therapeutic uses of cannabis and cannabinoids. *Br J Anaesthesia* 2001; **56**: 1059–68.
- Hall W, Degenhardt L. Adverse health effects of non medical cannabis usage, *The Lancet*, Volume **3474 (Suppl 9698)**: 1383–6.
- Hall W, Degenhardt L. Prevalence and correlates of cannabis use in developed and developing countries. *Curr Opin Psychiatry* 2007; **20**: 393–7.
- Jager G, Kahn RS, van den Brink W, van Ree JM, Ramsey NF. Long-term effects of frequent cannabis use on working memory and attention: an fMRI study. *Psychopharmacology* 2006; **185 (Suppl 3)**: 358–68.
- Solowij N, Michie PT. Cannabis and cognitive dysfunction: Parallels with endophenotypes of schizophrenia? *J Psychiatry Neurosci* 2007; **32**: 30–52.
- Large M, Sharma S, Compton MT, Slade T, Nielsen O. Cannabis use and earlier onset of psychosis: a systematic meta-analysis. *Archives Gen Psychiatry* 2011; **68**: 555–61. doi:10.1001/archgenpsychiatry.2011.5.
- Arseneault L, Cannon M, Witton J, Murray RM. Causal association between cannabis and psychosis: Examination of the evidence. *British J Psychiatry* 2004; **184**: 110–7.
- Ehrenreich H, Rinn T, Kunert HJ, Moeller MR, Poser W, Schilling L et al. Specific attentional dysfunction in adults following early start of cannabis use. *Psychopharmacology* 1999; **142**: 295–301.

23. Pistis M, Perra S, Pillolla G, Melia M, Muntoni AL, Gessa GL. Adolescent exposure to cannabinoids induces long-lasting changes in the response to drugs of abuse of rat midbrain dopamine neurons. *Biol Psychiatry* 2004; **56**: 86–94.
24. Pope HG, Gruber AJ, Hudson JI, Cohane G, Huestis MA, Yurgelun-Todd D. Early-onset cannabis use and cognitive deficits: What is the nature of the association? *Drug Alcohol Depend* 2003; **69**: 303–10.
25. Schneider M, Koch M. Chronic pubertal, but not adult chronic cannabinoid treatment impairs sensorimotor gating, recognition memory, and the performance in a progressive ratio task in adult rats. *Neuropsychopharmacology* 2003; **28**: 1760–9.
26. National Academy of Sciences, Institute of Medicine. *Marijuana and medicine: Assessing the science base*. Washington, DC: National Academy Press; 1999: 6.
27. MacCoun R, Reuter P. Evaluating alternative cannabis regimes. *British J Psychiatry* 2001; **178**: 123–8.
28. Single E, Christie P, Robert A. The impact of decriminalization in Australia and the United States. *Journal of Public Health Policy* 2000; **2**: 157–86.
29. Donnelly N, Hall W, Christie P. The effects of partial decriminalization on cannabis use in South Australia, 1995–1993. *Australia Journal of Public Health* 1995; **19**: 281–7.
30. Rienerman C, Cohen D, Hendrien K. The Limited Relevance of Drug Policy: Cannabis in Amsterdam and in San Fransisco. *Am J of Public Health* 2004.
31. Johnston LD, O'Malley PM, Bachman JG. *Marijuana decriminalization: The impact on Youth 1975-1980. Monitoring the Future Occasional Paper No. 13*. Ann Arbor, MI: Institute for Social Research, University of Michigan; 1981.
32. McGeorge J, Aitken CK. Effects of cannabis decriminalization in Australian Capital Territory on university students' pattern of use. *J Drug Issues* 1997; **27**: 785–93.
33. Kandel DB. Does marijuana use cause the use of other drugs? *JAMA* 2003; **289**: 482–3.
34. Office of Drug Control Policy. *The Economic Costs of Drug Abuse in the United States, 1992–2002*. Washington, DC: Executive Office of the President; 2004.
35. Single E, Christie P, Ali R. The impact of cannabis decriminalization in Australia and the United States. *J Public Health Policy* 2000; **21**: 157–86.
36. Pedersen W, Skardhamar T. Cannabis and crime: Findings from a longitudinal study. *Addiction*; **105**: 109–118.
37. UNODC World Drug Report (Internet). United Nations Office on Drugs and Crime 2007. [cited 2011 June]. Available from: http://www.unodc.org/unodc/en/world_drug_report.html
38. Harding O. Decriminalization of Ganja, Jamaica's Treaty Obligations. *West Indian Law Journal*. 2000; **27**: 99–122.