In a society highly focused on physical appearance, people are increasingly using the so-called performance and image-enhancing drugs (PIEDs) or life-style drugs as an easy way to control weight. Preliminary data from online sources (e.g. websites, drug forums, e-newsletters) suggest an increased use of cannabis amongst the general population as a PIED due to its putative weight-loss properties. The use of cannabis and/or cannabis-related products to lose weight may represent a new substance-use trend that should be carefully monitored and adequately investigated, especially in light of the well-known adverse psychiatric and somatic effects of cannabis, its possible interaction with other medications/drugs and the unknown and potentially dangerous composition of synthetic cannabinomimetics preparations. Copyright © 2015 John Wiley & Sons, Ltd.

Keywords: cannabis; weight loss; image-enhancing drugs

Perspective

Obesity and overeating are becoming some of the most prevalent health concerns amongst all populations and age groups worldwide, resulting in a significant increase in mortality and morbidity.[11] Although diet and exercise are the mainstay of weight management,[11] people are increasingly using the so-called performance and image-enhancing drugs (PIEDs) or life-style drugs as an easy way to control weight.[2–4] In addition, modern society is highly focused on physical appearance and individuals often try to achieve unrealistic standards of thinness.[2,5] Therefore, PIEDs are increasingly used to control weight even in non-obese and non-overeating populations.[2,4]

Cannabis is the most widely used international controlled drug (ICD) with a lifetime prevalence estimate of use ranging from 10 to 30% in the adult population.[6] A link between cannabis use and psychiatric disorders has been observed: in individuals with certain genetic or environmental vulnerabilities, long-term cannabis use increases the risk of anxiety, mood, psychotic, functional and cognitive disturbances.[6] Moreover, long-term cannabis use has been associated with deleterious effects on respiratory, cardiovascular, and metabolic systems.[6]

Cannabis contains a wide number of active chemicals, including more than 60 fitocannabinoids.[7] Among its main constituents are Δ9-tetrahydrocannabinol (THC), cannabidiol (CBD), and cannabiol (CBN).[7] These molecules mimic the effects of endogenous endocannabinoids (e.g. anandamide, 2-arachidonoylglycerol), which act on cannabinoid receptors CB1 and CB2 mediating a variety of physiological processes.[7]

Despite its usage in recreational settings, cannabis is also used in medicine to treat various conditions including central thalamic pain and dystonia, proximal myotonic myopathy, familial Mediterranean fever, and multiple sclerosis.[8–10] Due to its action on energy homeostasis regulation, appetite enhancement, and nausea suppression,[11–13] cannabis and cannabis-based medications are also used to contrast gastrointestinal disorders and weight loss in specific groups of patients (e.g. patients undergoing cancer chemotherapy or treatment with interferon-ribavirin, patients with AIDS or other medical conditions that may cause anorexia).[14] In addition, evidence has emerged from animal models and human subjects suggests that chronic administration of receptor CB1 antagonists can lead to decreased body weight and improved metabolic parameters[15,16]; this knowledge supported the development of CB1 antagonists such as rimonabant as anti-obesity drugs.[15,16]

Despite the evidence that cannabis stimulates appetite,[12,13] recent findings suggest that cannabis users are less likely to be obese than non-users[17] and that use of cannabis may be associated with lower levels of fasting insulin, insulin resistance, and smaller waist circumference.[18] As a consequence, it has been hypothesized that the observed lower prevalence of obesity and better metabolic profile in cannabis users may be directly related to cannabis exposure, suggesting that THC or THC/CBD combined drugs might be possible therapeutic options for weight loss and management of obesity. These findings, however, are preliminary and deserve further investigation. From a pharmacological

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point of view, such a paradoxical effect of cannabis could be linked to tolerance development in cannabis users as well as to the presence of other THC-related compounds potentially interfering with THC.\[19–22\]

From our regular monitoring of online sources (e.g. websites, drug forums, e-newsletters),\[23–27\] we have recorded an increasing use of cannabis as ‘self-medication’ for weight management.

The use of ‘cannabis weight loss’ as a search term in the Google Search engine results in over a million sites, witnessing a widespread diffusion of the topic online.\[28\] Various studies have shown, in fact, that the Internet is the most immediate and popular source of information about illicit drugs and their use, and that the monitoring of the Internet is a reliable method of obtaining preliminary information about new and emergent substance-use related trends.\[23–27\]

Online users report weight loss after smoking cannabis,\[29,30\] together with appetite reduction and eating pattern modifications.\[31,32\] Users also report that smoking cannabis at night before falling asleep reduces hunger the day after, leading to an overall reduction in caloric intake.\[31\] In ‘pro-anorexia’ online communities, cannabis use is promoted to ease hunger pains, relax and ‘take one’s mind off food’, particularly while fasting or during restrictive diets.\[32\] Users also describe cannabis as a metabolism booster or an appetite suppressor.\[30\] In 2013, Art Glass published an ebook titled The Marijuana Diet – The de-stress diet, smoke your fat away which focused on the idea that a regimen of moderate cannabis smoking has effective weight-loss properties.\[33\] In the same year, the popular Men’s Journal website claimed that ‘Marijuana is a surprising way to speed up your metabolism’.\[34\]

These preliminary data suggest an increased use of cannabis amongst the general population as a PIED due to its putative weight-loss properties. In a society increasingly focused on physical appearance, the self-medicated use of cannabis and/or cannabis-related products to lose weight represents a new substance-use trend that should be carefully monitored and adequately investigated. The health risks associated with this phenomenon are potentially high, especially in light of the adverse psychiatric and somatic effects of cannabis and its possible interaction with other medications/drugs\[35\]; this is particularly true in the case of the increasingly used synthetic cannabinoids preparations, as they may have unknown or variable compositions which might include untested or adulterated components.\[33\] Overall, the results of this work make us reflect on the versatile properties and usage of cannabis over time, which seem to be never ending.

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