



Editorial

Marijuana: A gateway to cigarette smoking?☆

¿Es el consumo de marihuana una puerta de entrada para el consumo de tabaco?



Tobacco and alcohol are the most widely used drugs globally. In the case of tobacco specifically, there are more than 1 billion smokers worldwide.¹ The number of smokers has been steadily falling for decades, mainly among adults in developed countries. However, this reduction in smoking is not observed among young people—more than 150 million adolescents smoke worldwide¹—and now they are even starting at a younger age. Marijuana (cannabis) is the most widely used illicit drug in the world, with more than 147 million users,¹ and consumption is rising.

According to the National Survey on Drug Use and Health (NSDUH)² conducted in the United States in 2016, the number of new tobacco users (> 12 years of age) was 1.8 million compared to 2.6 million new marijuana users. In Spain, the 2015 National Drug Survey³ (EDADES) reported that more people began to use cannabis (16,677 individuals) than tobacco (142,282 individuals), with higher rates among young people aged 15–17.

The opposing trends in tobacco and marijuana use are largely related to the perception of risk. Smoking control strategies and evidence of the adverse effects of tobacco have led to an increase in the perception of the risk of smoking among the population. However, the opposite is true of marijuana, for which the perception of harm is decreasing as its social acceptance, medicinal use,⁴ and legalization⁵ increase. In the 2016 NSDUH, only a third of respondents perceived a significant risk associated with weekly marijuana use, compared to 72.8% who perceived a high risk associated with daily tobacco use.²

Multiple drug use is common and usually follows a pattern described more than 40 years ago by Kandel and Faust,⁶ generally beginning in adolescence with the use of tobacco and alcohol, followed by marijuana, and finally other illegal drugs. This model introduced the concept of the “gateway”: that the use of one drug can open the door to the use of other substances.

One of the most common drug associations is tobacco and marijuana. Around 41%–94% of adult marijuana users are smokers, and 25%–52% of smokers use cannabis.⁷ Smokers are more likely to use marijuana, they start earlier and consume more, and they have a higher risk of developing dependence.^{7,8} However, there is also evidence of increased tobacco use among marijuana users, as demonstrated by the 2014 NSDUH⁹ which reported an 8.9-fold risk compared to non-users.

In addition to the gateway effect itself, commonly observed for other drugs, the mechanisms involved in tobacco-cannabis binomial include biological and environmental factors. These are discussed in 2 reviews published in 2012 by Peters et al.⁷ and by Agrawal et al.⁸, and include genetic predisposition, neurobiological factors with common pathways for both substances, common route of administration with the same sensory stimuli associated with smoking, enhancement of pleasure and compensation of side effects, social milieu especially in relation to friends during adolescence, and, of course, frequent simultaneous use.

According to the hypothesis mentioned above, tobacco may act as a gateway to the initiation of marijuana use. Since the onset of drug use is strongly influenced by the accessibility and acceptability of drugs, current epidemiological changes involving increased marijuana use and reduced tobacco use can lead to what some authors^{10,11} have already described in recent years as a reverse gateway between tobacco and marijuana. Both substances can therefore act as a gateway in both directions, in terms of both starting consumption and developing dependence.

In 2005, Patton et al.¹¹ published data from a cohort of 1943 non-smoking adolescents who were followed for 10 years. Results showed that weekly cannabis use significantly increased the likelihood of subsequent initiation of tobacco use with an odds ratio (OR) of 8.3 and a 95% confidence interval (95% CI) of 1.9–36. Moreover, among 21-year-old smokers who had not yet developed tobacco dependence, daily cannabis use tripled the likelihood of developing tobacco dependence by the age of 24.

Although marijuana use is more common among men, a study of 3787 women¹² found that cannabis users had a 4.4-fold greater risk of starting to smoke cigarettes than non-users, and a 2.8-fold risk of developing tobacco dependence if they were already smokers.

Data have recently been published from another study based on the results of a US Population Assessment of Tobacco and Health survey,¹³ in which 2 periods were compared: 2013–2014 and 2014–2015. This study of more than 26,000 adults (> 18 years) showed that non-smoking cannabis users had an increased risk of initiating both non-daily [adjusted OR (aOR) = 5.50; 95% CI: 4.02–7.55] and daily tobacco use (aOR = 6.70; 95% CI: 4.75–9.46) at 1 year. Moreover, smokers were less likely to quit (aOR = 0.36; 95% CI: 0.20–0.65), and former smokers had a higher risk of smoking relapse, whether daily (aOR = 1.90; 95% CI: 1.11–3.26) or occasional (aOR = 2.33; 95% CI: 1.61–3.39).

These findings raise questions on the future impact of normalizing marijuana use and its increasingly widespread legalization.

☆ Please cite this article as: de Higes-Martínez EB. ¿Es el consumo de marihuana una puerta de entrada para el consumo de tabaco? Arch Bronconeumol. 2020;56:693–694.

The harmful health effects of cannabis have been widely demonstrated^{14,15} and the growing association of tobacco and marijuana use¹⁶ increases risks to users. However, at the present time, the greatest risk of marijuana use in epidemiological terms may possibly be its role as a gateway to cigarette smoking, overturning efforts to impugn the consumption of a substance that is still the world's greatest preventable cause of morbidity and mortality.

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26 July 2019