Cannabis: Challenges Between Legislation and Cognitive Competence

Cannabis: los Retos Entre La Legalidad Y La Competencia Cognitiva

Editorial

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Marihuana (Cannabis) is the most consumed illicit drug worldwide. By 2013, 180,6 million people, that is 3.9 % of the world population consumed the substance, within a wide range of age (15 to 64 years old). In Colombia, it has been estimated that 1 of every 3 students has tried marihuana in their life. Additionally, the reported data by 2012 informed that the prevail of 15,2% placed the country in the highest position of cannabis consumption among Peru, Ecuador and Bolivia, let along the ease of access to the product: 63% of students have declared no having difficulties to obtain marihuana (PRADICAN 2013).

Cannabis has been repeatedly associated to the changes in the executive function, yet many of those are not conclusive. Evidence in relation to the cognitive alterations suggest significant changes, mainly in work memory, inhibitory control, processing speed, decision making, and planning (Behan, et al. 2014; Cousijn, et al. 2014; Crean, et al. 2011; J, et al. 2014; Thames, et al. 2014) while other studies reported that abilities such as space work memory and sustained attention were still conserved (Grant, et al. 2012), even vocabulary tasks and CI (Fontes, et al. 2011).

Similarly, different studies with diverse methods have informed of a decrease in the ability to recognize and discriminate emotions in Cannabis consumers (Asmaro, et al. 2014; Hindocha, et al. 2014; Trezza and Campolongo 2013; Trezza, et al. 2012). Nonetheless, the long term effects of this substance on emotional processing remain unclear (Hindocha, et al. 2014).

If well it is true that different research studies (including those on animals) have reported changes in the perfusion and cerebral activation, which could explain some cognitive deficits, until now there is not enough evidence concerning whether the remodeling in the cerebral morphology mainly found in those cortical areas rich in type 1 cannabinoid receptors (hippocampus and amygdala), (Battistella, et al. 2014), as well as the gray substance in the orbitofrontal cortex are reversible or permanent after a period of abstinence, and whether or not this condition acts and evolves throughout life in different manner when the consumption has been carried out during adolescence or has started in adulthood (Bosker, et al. 2013; Schwope, et al. 2012).

The above justifies the need for conducting longitudinal studies with rigorous clinical criteria, population homogeneity and significant sampling.

Under this scenario, and facing the international discussions around marihuana legalization and decriminalization, and the increasing widespread perception of Cannabis as a “safe drug” with little or null secondary effects, the attention is once again drawn around whether its regular or sporadic consumption could remodel the brain and, in consequence, human cognition.

The strength of the debate on Cannabis use and its impact in mental health has gained arguments in the heterogeneity of research studies around the world, and in the majority of investigations that aim at finding relations between marihuana consumption and neurophysiological and cognitive changes. The weakness of the studies is strongly criticized due to the great interindividual variability, sexual dimorphism, sampling size and analysis methods for data

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processing. Adding to this list are: the weight that genetic ancestry studies include, that is, the identification of genes using genetic mapping methods by linkage disequilibrium (admixture mapping), with consumption patterns (early start, frequency and consumption intensity), the presence of comorbidity with psychiatric disorders, an excessive alcohol consumption, and personality disorders (such as Schizoid Personality Disorder), which support the complexity of the findings in function of circumscribing a detrimental cortical topology.

By now, it is imperative to take further steps in longitudinal studies and review, in light of the genetic and environmental interactions, the clinical characterization and consumption patterns in favor of addressing the Cannabis consumption issue and its impact on cognitive and emotional competences for the consumers.

Finally, and beyond controversy on the possible residual effects of Cannabis at the neurophysiologic, cognitive and emotional levels, we should highlight the executive competences that consumers display nowadays in a society that includes them as participants and potential managers of change from which stable cognitive devices are required in order to promote an adequate perception of the implications of consumption in the modern society.

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