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Marijuana Use among Medical Students in Uruguay and its Association with Smoking

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Abstract

Objectives: To assess the prevalence of tobacco and cannabis consumption among medical students, the association between tobacco/cannabis use and the students' instruction in the management of tobacco/cannabis use.

Materials and Methods: We conducted a descriptive, analytical study. The students answered an anonymous self-report questionnaire. The variables were: age, gender, tobacco and marijuana consumption, frequency of consumption, instruction in the management of tobacco and THC (tetrahydrocannabinol) use and whether they consider such consumption as harmful.

Results: 29.6% of students consumed tobacco in the last 12 months, and 63.5% at least once in their lives. 30.8% consumed marijuana in the last 12 months, and 50% at least once in their lives. There was a statistically significant association between tobacco and marijuana consumption. We found a statistically significant relationship between the students' instruction in marijuana and tobacco and marijuana/tobacco consumption at least once in their lives. We didn't find any relationship between their instruction in marijuana and tobacco and marijuana/tobacco consumption in the last 12 months. There wasn't a statistically significant association between the concept of harmfulness and use of marijuana/tobacco at least once in their lives.

Conclusions: Despite the concept of harmfulness related to the use of marijuana, it is relatively common among medical students. The use of tobacco could predispose the individual to use marijuana. We must insist on instructing medical students in how to approach and manage patients who consume marijuana.

Key words: marijuana, tobacco, students

Introduction

Marijuana is the most commonly used illicit substance throughout the world. The passing of the 2013 Law on Use and Regulation of Legal Consumption of Marijuana in Uruguay poses various challenges to health-care systems. One of them could be the fact that the populations consider the consumption of this substance as harmless. The 2014 National Survey on the Use of Drugs by Secondary School Students in Uruguay found that approximately 17% of adolescents had consumed marijuana in the last year, and that 53% claimed to have easy access to it. The mean age at first marijuana use was 14 years old[1-3].

Despite the apparent new sociological attitude towards cannabis, behavioral, neurologic and mental effects, as well as the impact on the respiratory airways, are still a matter of concern. There are studies that show the development of chronic bronchitis as a consequence of bronchial mucosa inflammation due to inhaled smoke, and the question whether there is airflow obstruction or not is under discussion[4-12].

The responsibility of educational centers to instruct medical students both in promoting healthy lifestyles and in the potential damages associated with substance consumption is important for the future management of their patients[13].

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If medical students and healthcare personnel became aware of the fact that they are a role model for their patients and the society, they would help prevent substance consumption. We did not find information about the frequency of cannabis consumption among physicians and medical students in Uruguay.

The purpose of this study is to explore the prevalence of tobacco and marijuana use among medical students of the Universidad de la República de Uruguay and identify differences in the characteristics of the groups according to their consumption habits.

Materials and Methods

We conducted an observational study by means of a questionnaire. The population under study was made up of 800 fifth-year medical students studying for the Doctor in Medicine degree at the Universidad de la República Uruguay, distributed in four hospitals. The sampling included all the students of the advanced clinical coursework who were in class the day of the study in two public hospitals with teaching services of the Faculty of Medicine. The students had not been previously informed about our visit. The day of the survey, we explained the characteristics of the study and all the participants gave informed consent.

The participants completed a structured, self-report questionnaire anonymously. The questionnaire had been specially designed for the study. It consisted of 12 questions about age, gender, tobacco and marijuana consumption (in the last 12 months and at least once in their lives), if they considered the use of marijuana and tobacco as harmful, if they had acquired specific knowledge about how to manage tobacco and marijuana consumption during their instruction as physicians.

The results are expressed as absolute or relative frequencies. The percentages were calculated according to the total number of individuals surveyed who answered each question. In order to compare proportions we applied the Chi2 Test. P values of less than 0.05 were considered as statistically significant.

Results

Of the 180 students who answered the questionnaire, 29.94% (n = 54) were male and 70.06% (n = 126) were female; with a mean age of 23 years. 30.29% of the students reported that they had consumed marijuana in the last 12 months (n = 53) and 60.57% at least once in their lives (n = 106). The percentages were calculated over a total of 175 students who answered these questions. 29.65% of the students reported that they had consumed tobacco in the last 12 months (n = 51) and 63.58% at least once in their lives (n = 110). These percentages were calculated over a total of 172 and 173 individuals surveyed who answered the questions, respectively.

Of the 51 students surveyed who reported that they had consumed tobacco in the last 12 months, 32 (62.75%) also recognized that they had consumed marijuana in the last 12 months and; of the 122 students who did not consume tobacco in the last 12 months, 21 (17.21%) stated that they had consumed marijuana in the same period ($p < 0.0001$). Of the 110 students who stated that they had consumed tobacco at least once in their lives, 81 (73.64%) had also consumed marijuana at least once in their lives; of the 63 students who had never consumed tobacco, 25 (39.68%) had consumed marijuana ($p < 0.0001$).

Chart 1 shows the gender, age, specific instruction and perception of the harmful effects of tobacco and marijuana of the groups of students defined according to their historical consumption. **Chart 2** shows the gender, age, specific instruction and perception of the harmful effects of tobacco and marijuana of the groups of students defined according to tobacco or marijuana consumption in the last 12 months.

Of the 149 students who received instruction in tobacco, 67.11% (n = 100) consumed tobacco at least once in their lives; and 43.48% of the 23 students (n = 10) who did not receive any instruction in tobacco consumed tobacco at least once ($p = 0.028$). 72% (n = 44) of the total 61 students who had received instruction in marijuana did use it at least once; and 55.8% (n = 62) of the 111 students who did not receive instruction in marijuana had used it at least once in their lives ($p = 0.036$).

Regarding the concept of harmfulness, all of the students surveyed answered affirmatively about considering the tobacco as harmful. Of the 161 students who considered the marijuana as harmful,

CHART 1. Group composition defined according to historical consumption report

	Tobacco or marijuana consumption at least once in their lives*			
	Neither tobacco nor marijuana (n = 39)	Only obacco (n = 27)	Only marijuana (n = 22)	Tobacco and marijuana (n = 81)
Age (average)	24.18	24.74	22.73	23.81
Feminine gender (n)	31	19	15	53
Received specific instruction in tobacco (n)	32	25	15	73
Received specific instruction in marijuana (n)	8	9	9	34
Considers the tobacco as harmful (n)	39	27	22	81
Considers the marijuana as harmful (n)	37	24	22	72

* Data from 169 students who answered both questions

CHART 2. Group composition defined according to the "at least once in the last 12 months" consumption report

	Tobacco or marijuana consumption at least once in the last 12 months*			
	Neither tobacco nor marijuana (n = 100)	Only obacco (n = 29)	Only marijuana (n = 20)	Tobacco and marijuana (n = 32)
Age (average)	24.26	22.79	23.05	23.97
Feminine gender (n)	69	17	12	21
Received specific instruction in tobacco (n)	82	16	19	30
Received specific instruction in marijuana (n)	30	9	6	14
Considers the tobacco as harmful (n)	100	19	20	32
Considers the marijuana as harmful (n)	96	15	20	26

* Data from 171 students who answered both questions

60.25% had consumed it at least once in their lives and 29.75% at least once in the last 12 months. Of the 119 students who did not consume marijuana in the last 12 months, 93.28% considered it as harmful (n = 111); whereas 88.68% (n = 47) of the 53 who did consume it in the last 12 months considered it as harmful (p = 0.05134).

Discussion

The main psychoactive ingredient of marijuana is delta-9-tetrahydro cannabinol (THC), isolated for the first time in 1964 in Israel[5,6]. Cannabis consumption has been associated with several neuropsychiatric effects such as alterations in the neurocognitive development process, amotivational syndrome, depressive disorders, anxiety disorders and increase in suicide rates[4]. Also a greater prevalence of schizophrenia has been reported in marijuana consumers[7]. Prolonged, frequent use of 0.5 g/day of cannabis has been associated with cognitive impairments with persistent reduction in attention and memory[4]. Canadian studies concluded that the consumption of cannabis seems to interfere with the development of the cerebral cortex[8]. A Chilean study of students between 15 and 18 years old found alterations both in the neuroimages and in neuropsychological tests performed in marijuana consumers with an impact upon learning[9]. Smoking marijuana regularly has been associated with multi-segment, occlusive ischemic events during the act of smoking or immediately after[10].

This study found that, although most of the students surveyed considered the use of marijuana as harmful, 60.57% had consumed it at least once in their lives, and 30.29% in the last 12 months. These findings suggest that we are dealing with a population of vulnerable young people with a low perception of personal risk, regarding experimentation. The frequency of consumption in medical students of advanced levels seems higher than in middle school students, according to the 2014 National Survey on Drug Use among Middle School Students in Uruguay[2].

A statistically significant association has been found between smoking tobacco and marijuana, which could suggest that tobacco smokers are more likely to use marijuana. Another Uruguayan study carried out among young physicians also found an association between smoking tobacco and using marijuana[13].

As regards the opinion of the students surveyed about the harmfulness of tobacco and marijuana, 100% of all the groups considered the tobacco as harmful; whereas the group with the lowest perception of marijuana harmfulness was the one which consumed tobacco and marijuana most frequently, both historically and in the last 12 months.

Most of the students had received instruction in smoking but not in marijuana. The reason for this may be the well-developed tobacco control policy in our country and the incorporation of smoking management programs within academic programs. Despite the lack of university instruction in the consumption of marijuana, most of the students considered its use as harmful.

The use of tobacco among physicians decreased with the implementation of tobacco control policies and the intensification of academic instruction; that is why it is important to implement and improve the instruction in cannabis in this population[14].

This study, regarded only as exploratory, has important limitations. We used a convenience sample, and chose this method so as to access in a simple way an important number of members of the population under study. We used a non-validated questionnaire with no time considerations that could let us analyze if the students had received instruction in marijuana before they began to consume it; and the information analyzed comes from the answers of students surveyed without any objective measurements. Marijuana consumption among students who claimed to have received instruction was high. It is possible that marijuana consumers had a greater tendency to remember if they received any instruction in this topic. We recommend that more studies should be conducted in the future in order to obtain valid information on these topics.

Conclusions

Despite the concept of harmfulness of marijuana known to medical students, consumption seems to be higher among these students than in the general population. Smoking tobacco could predispose a person to use marijuana. Given the importance of physicians as role models, we recommend that instruction programs should be implemented for them to be able to manage marijuana consumers adequately within their new professional scenario.

References

1. Ley 19.172–Uruguay Poder Legislativo. 2013. www.parlamento.gub.uy/leyes/ley19172.htm
2. Junta Nacional de Drogas Presidencia de la Republica Uruguay. Sexta Encuesta Nacional de Hogares sobre consumo de drogas. El consumo de marihuana.2016. https://medios.presidencia.gub.uy/tav_portal/2015/.../NO.../encuesta.pdf1
3. Villatoro-Velázquez JA, Medina-Mora ME, Fleiz-Bautista C, et al. Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz; Instituto Nacional de Salud Pública; Secretaría de Salud. Encuesta Nacional de Adicciones 2011: Reporte de Drogas. Mexico D.F. INPRFM; 2012.
4. Rivera –Olmos M, Parra-Bernal M. Cannabis: efectos en el sistema nervioso central. Consecuencias terapéuticas, sociales y legales. Rev Inst Mex Seguro Soc. 2016; 54(5): 626-34.
5. Ramos Atance JA, Fernández Ruiz JJ. Cannabinoides: propiedades químicas y aspectos metabólicos. En: Monografía Cannabis. Ed. Bobes García J, Calafat Far A. Adicciones. 2001; 12 (Supl 2): 59-82.
6. Devane W, Dysarz F, Johnson M, Melvin L, Howlett A. Determination and characterization of cannabinoid receptor in rat brain. Mol. Pharmacol, 1988; 34: 605-613.
7. Foti DJ, Kolov R, Guey LT, et al. Cannabis use and the course of schizophrenia: 10 years follow up after first hospitalization. Am J Psychiatry. 2010; 167(8): 987-993.

8. French L, Gray C, Leonard G et al. Early Cannabis Use, Polygenic Risk Score for Schizophrenia and Brain Maturation in Adolescence. LAMA Psychiatry. 2015; 72(10): 1002-1011.
9. Mena I, Dorr A, Viani S, et al. Efectos del consumo de marihuana en escolares sobre funciones cerebrales demostradas mediante pruebas neurosicológicas e imágenes de neuro-SPECT. Salud Mental. 2013; 36: 367-374.
10. Wolff V, Armspach JP, Laver V, et al. Cannabis related stroke. Myth or Reality? Stroke 2013; 44: 558-563.
11. Joshi M, Joshi A, Bartter T. Marijuana and lung diseases. Curr Opin Pulm Med. 2014; 20: 173-179.
12. Rodríguez-Reyes Y, Pérez-Padilla R. Efectos de la marihuana en el sistema respiratorio. Neumol Cir Torax. 2013; 72(3): 194-196.
13. Torres V, Monteghirfo R, Saad Y, Noria A, Huarte A, West R. Uso de cannabis en médicos de un hospital público de Uruguay. Prev Tab. 2016; 18(3): 144-148.
14. Proyecto ITC (Agosto 2014). Informe Nacional ITC Uruguay. Resultados de los relevamientos 1 a 4 de la Encuesta (2006-12). Universidad de Waterloo, Waterloo, Ontario, Canadá; Centro de Investigación de la Epidemia del Tabaquismo y Universidad de la Republica, Uruguay.