USE OF MARIJUANA IN PHARMACY STUDENTS (2000–2005)

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In 2000–2005, a survey on the consumption of legal and illegal drugs of abuse was conducted in 1571 students of Faculty of Pharmacy in Hradec Králové, Charles University in Prague. The availability of cannabis and the prevalence rates of its use in university students were investigated. A standardized anonymous questionnaire was employed for the survey.

The average age of respondents was 20 years. The number of females was higher (82.8 %) than that of males. Marijuana was the most available and the most commonly used illegal drug of abuse in the group of pharmacy students. Its offer and the life-time prevalence increased over the 5 year period of the survey from 55.8 % to 72.9 % and from 30.3 % to 48.4 %, respectively. There was a predominance of the male users over the female ones, mainly in a category of high frequency of marijuana consumption (“used more than five times”). Almost three quarters of marijuana consumers admitted more than one experience with marijuana. Our data provide worrying statistics and support the need of continuous education also in university students to advise them on the risks of drug misuse.

INTRODUCTION

Cannabis (marijuana and hashish) is the most widely consumed illegal drug all over the world. According to the report of the United Nations Office on Drugs and Crime, the annual prevalence of cannabis abuse in the Czech Republic (10.9 %) is the highest among all European countries¹. High levels of cannabis use in the Czech Republic were also confirmed in school surveys, conducted in 1995, 1999 and 2003, which revealed life-time prevalences of cannabis use in the population of high school students (age 15–16) of 22, 35 and 43.6 %, respectively². In average, 81.9 % of high school students (age 14–19) who had ever used any illegal drug started with cannabis and the average age of its first use was 14 years in 2000 (ref.³). Among university students, cannabis also seems to be popular. About 63 % of university students in the UK, ranging from 71 % of arts students to 42 % of veterinary science students⁴, 26 % of university students in Brazil⁵ and 17.9 % in Greece⁶ reported to have at least one experience with cannabis.

The aim of our study was to report the quantity and frequency of cannabis use and its availability to pharmacy students in the Czech Republic.

METHODS AND PARTICIPANTS

The questionnaire-based survey was performed in 2000–2005 at the Faculty of Pharmacy in Hradec Králové, Charles University in Prague. Our sample involved a total number of 1571 pharmacy students, 1008 first year and

563 third year students (Table 1). The average age of first and third year students was 19.4 (range: 18–30) and 21.2 (range: 19–30), respectively. The number of females was higher (82.8 %) than that of males.

Anonymous standardized questionnaires were distributed to the students during their registration at the beginning of the academic year and almost all students participated. The questionnaire included questions on the use of alcohol, tobacco and illegal drugs of abuse, general socio-demographic data (i.e. age, sex, residence, education of parents, financial means, family conditions), knowledge and attitudes of students towards drugs of abuse.

Results are presented as descriptive statistics. Associations between variables were analysed by chi-square test.

RESULTS

Marijuana was the most available drug in the group of pharmacy students. Its offer increased from 55.8 % in 2000/1 to 72.9 % in 2004/5 (Fig. 1). Higher rates were found in the group of males than females both, every academic year and in summary (Fig. 2).

Marijuana was also the most commonly used illegal drug in pharmacy students. The life-time prevalence of marijuana use increased over the 5 year period of the survey from 30.3 % in 2000/1 to 48.4 % in 2004/5 (Fig. 1). When comparing male and female users, males used marijuana more often and with higher frequencies than females (Fig. 3, Fig. 4).

Table 1. Demographic characteristics of respondents

	1 st year				3 rd year			
	Number of students	Males (%)	Females (%)	Average age	Number of students	Males (%)	Females (%)	Average age
2000/1	150	20.0	80.0	19.2	101	15.8	84.2	21.0
2001/2	179	16.8	83.2	18.9	109	20.2	79.8	20.7
2002/3	169	13.6	86.4	19.6	78	21.8	78.2	21.3
2003/4	258	16.7	83.3	19.5	98	22.4	77.6	21.5
2004/5	252	11.9	87.7	19.6	177	20.3	79.7	21.5
Total	1008	15.5	84.4	19.4	563	20.1	79.9	21.2

Fig. 1. Life-time prevalence and offer of marijuana – trends 2000/1 – 2004/5 in pharmacy students (n=251 in 2000/1, 288 in 2001/2, 247 in 2002/3, 356 in 2003/4 and 428 in 2004/5). **Fig. 2.** Offer of marijuana to pharmacy students – comparison of males and females (n of males = 30 in 2000/1, 40 in 2002/3, 65 in 2003/4, 66 in 2004/5 and 201 total; n of females = 120 in 2000/1, 207 in 2002/3, 291 in 2003/4, 362 in 2004/5 and 980 total; ** – $p < 0.01$, chi-square test males vs. females).

Five categories of the frequency of marijuana use were distinguished in the questionnaire: “never used”, “used once”, “used twice to five times”, “used six to twenty times” and “used more than twenty times”. The prevalence rates of these categories are shown in Table 2. Almost three quarters of marijuana consumers admitted more than one experience with marijuana. In average, 7.6 % of respondents, with a twice greater proportion of males than females, had used marijuana more than twenty times.

DISCUSSION

Pharmacy students together with medicine students are considered to be the youngest members of the society active in the education and the propagation of healthy lifestyle. Their knowledge and attitudes to cannabis (marijuana and hashish) and to other drugs of abuse might help to extend the prevention and the treatment of regular

illegal drug use and may affect any future evaluation of these drugs of abuse.

In the Czech Republic, there is a strong evidence of an increase of experience with cannabis, especially in the subpopulation of adolescents and young adults. ESPAD studies conducted in the Czech Republic in 1995, 1999 and 2003 showed increase in prevalence rates of cannabis use in youth (age 15 or 16) from 21.8 % to 43.6 % (ref.²).

This is one of the largest studies on cannabis use in pharmacy students in the Czech Republic. Our results are consistent with the previous report⁷ showing that cannabis is the most common illegal drug in university students. Our survey also confirms the increase of marijuana use in pharmacy students. During years 2000–2005, the offer of marijuana and the life-time prevalence of marijuana use increased from 55.8 % to 72.9 % and from 30.3 % to 48.4 %, respectively. When comparing with previous survey in pharmacy students conducted in 1995–1999 (ref.⁸), experience with marijuana increased from 27.8 % to 48.4 % of students who had ever tried marijuana.

Fig. 3. Life-time prevalence of marijuana use in pharmacy students – comparison of males and females (n of males = 30 in 2000/1, 52 in 2001/2, 40 in 2002/3, 65 in 2003/4, 66 in 2004/5 and 253 total; n of females = 120 in 2000/1, 236 in 2001/2, 207 in 2002/3, 291 in 2003/4, 362 in 2004/5 and 1216 total; * – $p < 0.05$, ** – $p < 0.01$, chi-square test males vs. females).

Fig. 4. Prevalence of 'high frequency' marijuana use (more than five times in life) in pharmacy students – comparison of males and females (n of males = 30 in 2000/1, 22 in 2001/2, 40 in 2002/3, 65 in 2003/4, 66 in 2004/5 and 223 total; n of females = 120 in 2000/1, 87 in 2001/2, 207 in 2002/3, 291 in 2003/4, 362 in 2004/5 and 1067 total; * – $p < 0.05$, ** – $p < 0.01$, *** – $p < 0.001$, chi-square test males vs. females).

Table 2. Frequency of marijuana use in pharmacy students (%)

Academic year	Never used	Used once	Used twice to 5 times	Used 6 to 20 times	Used more than 20 times
2000/1	69.7	8.0	13.1	3.6	5.6
2001/2	62.8	8.0	13.2	8.7	6.9
2002/3	63.6	9.3	13.4	6.5	6.5
2003/4	56.2	12.6	12.6	8.4	10.3
2004/5	51.6	14.7	15.7	10.3	7.7

n = 251 in 2000/1, 288 in 2001/2, 247 in 2002/3, 356 in 2003/4 and 428 in 2004/5, bold – the highest value in the category

High marijuana use was also found in other Czech university students. The survey conducted in 2004 revealed the life-time prevalence of marijuana use in Prague university students about 48 % (ref.⁹). In 2000–2002, the life-time prevalence rates of marijuana use in Czech university students ranged from 59.5 % of medicine students (3rd Faculty of Medicine, Charles University in Prague) to 41.8 % of pharmacy students (Faculty of Pharmacy, Veterinary and Pharmacy University in Brno)¹⁰.

The development of a new life-style, which is more independent and less attached to the family bonds, can be one of the main reasons of higher abuse of illegal drugs, especially cannabis, in the group of university students. However, we suppose that such behaviour is a temporary phenomenon reflecting the current lifestyle of young people. They may stop this behaviour, when they become older and are in a position of professional responsibility. Contrary to this, results of the longitudinal survey

conducted in a cohort of medical students during their undergraduate studies and as qualified doctors in the UK showed a significant increase in consumption of both alcohol and illegal drugs (mainly cannabis) during the period of the survey¹¹. It would be important to establish whether such situation also exists in the Czech Republic.

Our data provide worrying statistics and support the need of continuous education also in university students to advise them on the risks of drug misuse.

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