

Received: 12.10.2009  
Accepted: 9.11.2009

## Knowledge of Dentistry, Medicine, and Pharmacy Students about Psychedelic Drugs in Kerman University of Medical Sciences

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<b>Background:</b>	<p><b>Abstract</b> Psychedelic drugs can cause one to get out of normal status and permanent cerebral defects, via affecting central nervous system. Consumption of these drugs seems to be increasing nowadays especially among the youth and university educated population. We conducted a study to evaluate the awareness of medical science students of Kerman University of medical science who are going to be the future medical population.</p>
<b>Methods:</b>	<p>This cross-sectional study was carried out on 471 of students of medicine, dentistry and pharmacy which were in the first to forth year of their education about psychedelic drugs (Ecstasy, LSD, Ice, crack and Yaba). To evaluate the students' awareness of drugs we used questionnaire with reliability and validity proven via pilot study. Statistics analysis was performed using SPSS<sub>13</sub> software.</p>
<b>Findings:</b>	<p>Average of their age was <math>3.2 \pm 20.4</math>. Overall among the students, 56.7% were in the low level of insight, 34.3% in medium and 6.9% in good level and 2.2% had best insight of the drugs. Also only 32.2% of students had the full information about the name of drug, 25.7% had information about the form of them, 24% about the addiction with them, 7% about their complication and only 5% about the origin of drugs. The information about all psychedelic drugs was higher among pharmacy students, students of the third year and males.</p>
<b>Conclusion:</b>	<p>Our study showed a low insight about psychedelic drugs like Ecstasy, LSD, Ice, Crack, and Yaba among the students. According to this lack of information of these groups, it is suggested that educational courses about the complication, signs and symptoms of these drugs be held.</p>
<b>Key words:</b>	<p><b>Knowledge, Professional PhD students, Psychedelic drugs, Ecstasy, LSD, Ice, Crack, Yaba.</b></p>
<p><b>Page count:</b> <b>Tables:</b> <b>Figures:</b> <b>References:</b></p>	<p>6 1 2 14</p>
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## Introduction

Psychedelic drugs are a category of drugs which are capable of inducing illusions, hallucinations, delusions, paranoid ideations, and other alterations of mood and thinking, via affecting central nervous system.<sup>1</sup> According to statistics, during the years 2001 to 2003, 185 million individuals experienced drug abuse, which equals 3% of the world's population. Also, 29.6 million individuals were amphetamine abusers, and 8.3 million persons were ecstasy abusers. Considering recent reports, psychedelic tablets abusers in Iran are about 45 to 50 thousand.<sup>2</sup> The most ecstasy consumers in most countries are in the age of 15 to 25 years old.<sup>3</sup>

Unfortunately, psychedelic drugs are known as non-addictive substances among youth, and it has caused higher prevalence of their abuse. These substances seem to the users to be extremely safe because they are distributed in non-injection forms like pills, paper slips or snuff powder which do not produce a risk of transmitting infectious diseases (most frequently viral hepatitis and HIV). In addition, shape variety, accessibility, simple and various ways of abuse are assisting their consumption growth.<sup>4,5</sup> Despite the name, the feature distinguishes these agents from other classes of drugs is their capacity to induce states of altered perception, thought and feelings that are not experienced otherwise. These drugs have some short-term and long-term sequels which may be permanent or lethal in some cases. Side effects such as panic attacks, memory loss, intracranial haemorrhage, suicide thoughts, lung cancer, myocardial infarction, renal failure, schizophrenia, visual disorders, depression, coma, etc. are some examples.<sup>6-9</sup> Psychedelic drugs can show the effects of both stimulants and hallucinogens.<sup>10,11</sup> Public knowledge about psychedelics and their signs, symptoms, and side effects seems to be insufficient, even among medical groups.<sup>12,13</sup> Considering the growing consumption and their harms and irreparable effects, self prevention sounds necessary, which demands knowledge and awareness.

In this study, most of the students were in the age range of 18-25 years old (the most prevalent age for drug consumption). They were studying in majors that make them the future public health care society and drug abusers' therapists. Despite these facts, there is little information about psychedelics in medical schools curriculum. Therefore, this investigation was performed

to evaluate knowledge of medical science students about some of these substances (Ecstasy, Crack, LSD, Crystal (Ice) and Yaba). The results can help to develop useful guidelines and educational programs for this group and other social groups as well.

## Methods

In this cross-sectional study, using census sampling method, all students of Kerman University of Medical Sciences, in first, second, third and fourth year of medicine (205 students), dentistry (116 students) and pharmacy (143 students) were included.

Knowledge assessment was performed by an anonymous questionnaire containing 11 questions; 9 questions focused on pharmaceutical forms, drug-abusing ways, addiction, pharmacologic information, signs and symptoms, side-effects, and different ways of getting familiar with 5 substances including: Ecstasy, Crack, LSD, Crystal and YABA. At the end, 2 questions ascertained demographic variable (age, sex, marital status, housing status, etc.). Validity and reliability of the questionnaire were proven by performing a pilot study on 10 people and refining the questions. The questionnaires were distributed by two colleagues, and the respondents were informed about the aim of the study as well as the importance and usefulness of data provided by them, with respect to the legislation protecting the privacy.

SPSS<sub>13</sub> was used for maintaining and processing the data. Awareness scores were calculated considering each question importance. The statistic processing was performed by using t-test and ANOVA to compare awareness mean scores of different groups. Statistical significance was assessed at the level of  $P < 0.05$ .

In order to delineate the awareness levels, students' scores were classified to 4 groups: 0-99.5 considered as Weak, 100-199.5 as Moderate, 200-299.5 as Good, and more than 300 as Excellent.

## Results

Average of the participant age was  $20.4 \pm 3.2$  years and 93.8% were in the age group 18-25. In this study 37.4% were male and 62.6% were female. About the education field, medical students, about the arrival of the year, the first year, about the marital status, bachelors and about the situation of accommodation, students who live in dormitories were the most frequent groups participated in our study.

in all materials compared to other students ( $P < 0.05$ ) and there was no significant difference between medical and dentistry students. The awareness scores were higher in third year students compared to others and their scores were significantly higher than the fourth year students. But there was no significant difference between the other groups. The awareness score was higher in male students ( $P < 0.001$ ), but there was no significant difference in other variables such as marital status and accommodation (Table 1).

Just 32.2% of students knew the name of the drugs, 25.7% knew their forms, 24% knew their addicting characteristic, 7% knew their complications, and only 5% knew the origin of these drugs.

Students' awareness scores were different in various psychedelic drugs, 32% had full scores for

ecstasy, 11% for Ice, 0.4% for LSD, 0.3% for Crack, and 0.2% for Yaba, and percentage of students who had full awareness score about ecstasy was higher than other drugs ( $P < 0.001$ ).

Participants' information of drugs came from audio and visual resources. 72% had audio and visual information about ecstasy, 36% about Ice, 14% about LSD, 9% about Crack and 3% about Yaba. The most resources were audio and the least were party and self seeing ( $P < 0.05$ ). In the figure 1, students' mean scores of knowledge about psychedelics drugs are presented; the percentage is senn in figure 2.

Overall, 56.7% of students were in the low level of insight, 34.3% were in medium level and 6.9% were in Good level and 2.2% had best insight of the drugs.

Table 1. Relation between students' awareness scores and some variables

	Gender		Entrance year				Education field			
	Male	Female	82	83	84	85	Medicine	Dentistry	Pharmacy	
Mean	119.8	90.3	108.6	125.6	103.3	83.5	94.3	99	111.9	
SD	61.9	79.2	11	11	10.4	10	7.6	8.7	8.8	
	P < 0.001		P < 0.01							
	t = -4.4		f = 7.8				df = 3	P = 0.6	f = 2.7	df = 2

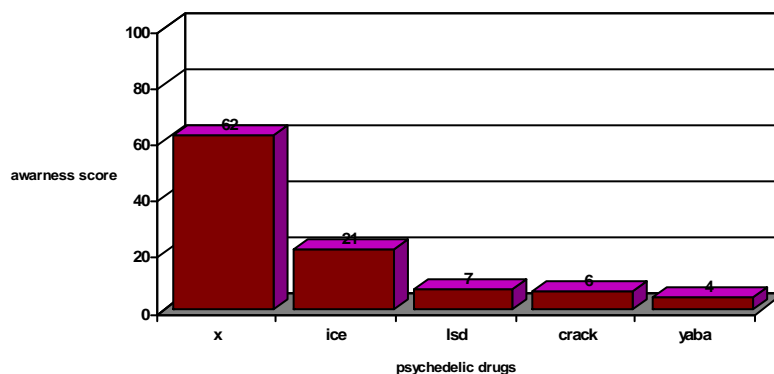


Figure 1. Average students knowledge score about psychedelics drug (Ecstasy, Crack, LSD, Crystal (Ice) and Yaba)

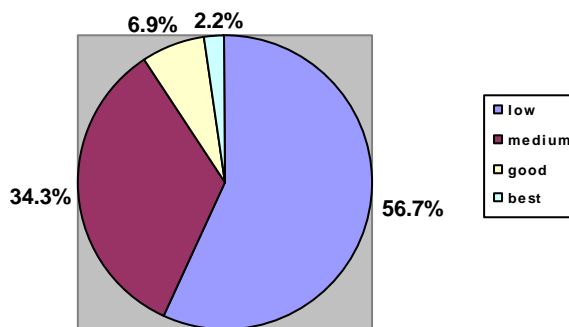


Figure 2. Percentage of students' awareness about psychedelics drug (Ecstasy, Crack, LSD, Crystal (Ice) and Yaba)

## Discussion

Experiences of center personnel (codes 3-7) According to the results of this survey, medical science students had a low level of awareness about psychedelics, which suggests the necessity for including such information in their educational program. Ecstasy was the most familiar substance to the students, while Yaba was the least known. This seems reasonable since there are more warnings about ecstasy on Iranian mass media. Male students' knowledge was higher than female students. Pharmacy students had the most information about all drugs compared to other students, which can be a result of their university education.

Despite potential methodological differences regarding data collection, other studies had similar findings when similarly formulated questions were used, which supports validity of our results. In a survey in Shahid Beheshti University of Medical Sciences, medical students level of knowledge about ecstasy and its abuse treatment was insufficient.<sup>12</sup> Another study carried out in Birjand universities, found a low level of awareness among students, and only 6.9% of the students had enough information,<sup>6</sup> which is similar to the results of the present study. A survey among nursing students of Iran in 2003 reported that out of 400 students, 21.4% of women and 61% of men had the experience of abusing either alcohol, cigarette, opium, heroin, LSD, cocaine, cannabis, or morphine and 1.8% of women and 15.3% of men were continuing the abuse.<sup>8</sup> A systematic review assessing drug abuse among Iranian

students revealed that 2.7% of male and 0.6% of female student of a total 501 students in Shiraz University had once experienced drug abuse, and 0.3% of men were daily abusers of hallucinogens (regular and daily consumption at least for one month).<sup>14</sup> Furthermore, 0.3% of 346 health care students (dentistry and pharmacy faculties) in Shiraz University had regular consumption of hallucinogens. In a sample of 5250 students from 57 universities in 15 cities of Iran in the year 2003, 0.4% had consumed LSD during their life.<sup>2</sup> These statistics cause for concern considering the harmful effects of these substances. Awareness plays the key role in decreasing drug consumption, but according to the studies it is lower than expected. A precise plan to increase social awareness about substance abuse, particularly for youth and university students is strongly needed. Preparation and edition of educational programs at universities, distribution of students, holding congresses and seminars, and production of public media programs are some ways to reach the goals.

**Conflict of interest:** The Authors have no conflict of interest.

## Acknowledgements

The authors would like to acknowledge the Neuroscience Research Centre and Students' Research Centre of Kerman University of Medical Sciences for funding this study. Also, special thanks to Dr. Ali Akbar Haghdoost, Dr. Ali Mirzazadeh, and Dr. Sudabeh Navadeh Khodadadi who helped us in this investigation.

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## آگاهی دانشجویان دکترای حرفه‌ای دانشگاه علوم پزشکی کرمان درباره بعضی مواد روان گردان

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تاریخ دریافت: ۸۸/۷/۲۰

تاریخ پذیرش: ۸۸/۸/۱۸

### چکیده

مواد روان گردان دسته‌ای از مواد هستند که با تأثیری که بر روی سیستم عصبی می‌گذارند انسان را از حالت طبیعی خارج کرده، عوارض خطرناکی همچون صدمات پایدار مغزی دارند. از آن جایی که در حال حاضر مصرف این گونه مواد در جهان به خصوص در قشر جوان و دانشگاهی افزایش یافته است، بر آن شدیم تا میزان آگاهی دانشجویان دکترای حرفه‌ای دانشگاه علوم پزشکی کرمان که گروهی از درمانگران آینده می‌باشند را بررسی نماییم.

این مطالعه مقطعی به صورت سرشماری بر روی ۴۷۱ نفر از دانشجویان دانشگاه علوم پزشکی کرمان در رشته‌های پزشکی، دندان‌پزشکی و داروسازی سال‌های اول تا چهارم در مورد مواد روان گردان (اکستازی، شیشه، کرک، LSD، یا با) انجام گرفت. جهت بررسی آگاهی، پرسش‌نامه‌ای با اعتبار و پایایی تأیید شده، تنظیم شد و سپس داده‌ها با نرم‌افزار SPSS ۱۳ آنالیز گردید.

میانگین سنی دانشجویان مورد بررسی  $20/4 \pm 3/2$  بود. در مجموع، آگاهی ۵۶/۷ درصد دانشجویان در گروه ضعیف، ۳۴/۳ درصد در گروه متوسط، ۶/۹ درصد در گروه خوب و ۲/۲ درصد از افراد در گروه عالی قرار داشتند. آگاهی کامل نسبت به نام مواد روان گردان در ۳۲/۲ درصد از دانشجویان، به شکل مواد در ۲۵/۷ درصد، به اعتیادآوری در ۲۴ درصد، به علائم و عوارض مواد در ۷ درصد و منشأ مواد در ۵ درصد وجود داشت. نمره آگاهی کل در دانشجویان داروسازی سال سوم‌ها و پسرها بالاتر بود ( $P < 0/05$ ).

با توجه به نتایج این پژوهش، میزان آگاهی دانشجویان در مورد مواد روان گردان اکستازی، LSD، شیشه، کرک و یا با در سطح پایینی ارزیابی گردید. با توجه به عدم آگاهی این گروه از عوارض خطرناک مواد ذکر شده، آموزش در زمینه ماهیت، علائم و عوارض مصرف مواد روان گردان پیشنهاد می‌گردد.

آگاهی، دانشجویان دکترای حرفه‌ای، مواد روان گردان، اکستازی، شیشه، کرک، LSD، یا با.

مقدمه:

روش‌ها:

یافته‌ها:

نتیجه‌گیری:

واژگان کلیدی:

تعداد صفحات: ۶

تعداد جدول‌ها: ۱

تعداد نمودارها: ۲

تعداد منابع: ۱۴

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