

# Substance Abuse among Students of Zanjan's Universities (Iran): A Knot of Today's Society

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## Original Article

### Abstract

**Background:** In order to assess the status of drug abuse and likely addiction among university students, a descriptive study was designed.

**Methods:** 1200 subjects among the students of three universities in Zanjan were selected by stratified random sampling and their demographic information and history of substance abuse including hookah, cigarette, codeine, ibuprofen, alcohol, diazepam, tramadol, cannabis, opium, grass, heroin, crack, X pill, morphine, marijuana, Librium, and LSD were assessed by a standard questionnaire and were analyzed in 2010.

**Findings:** The mean age of students was  $21.3 \pm 2.3$  years (ranged 18-38 years) and the mean age of drug abuse onset was 19.45 years old. 48.2% of male students and 23.4% of female had a history of drug abuse at least once. 6.3% of males and 1.2% of female subjects were addicted constantly which the difference was statically significant ( $P < 0.001$ ). 32.7% were motivated by pain and 13.3% seeking for pleasure. Hookah with 18% and LSD with 1% had the lowest and highest percentage of drug use, respectively.

**Conclusion:** Substance abuse was higher in males than females. Drug abuse was higher among older students with higher degree, and with psychological disorder history. It seems that we require goal directed programs to control and reduce the prevalence of substance abuse, raise students' awareness and increase students' information about substance disadvantages especially in their entrance.

**Keywords:** Substance abuse, Addiction, University students

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## Introduction

Approximately 5% of the world population (200 million people) between 15 and 64 years of age use one illicit drug at least once a year.<sup>1</sup> The last report of Iran Drug Control Headquarter represented presence of 1.2-2 million substance abusers in our country<sup>2</sup> and 11 million were engaged with the addiction problems of themselves or their family members. 780 tons of addictive substances are annually used in our country and 225 million dollars are paid to these substances. Moreover, 100 deaths are reported monthly due to substance addiction.<sup>3</sup>

Studies have revealed that illicit substance abuse among young population is more prevalent than other age groups. Drug and alcohol abuse among university students are a major cause of concern.<sup>4,5</sup> Drug and alcohol use also influences other students who are not users. Addictive substances cause a barrier against social development and impose heavy economical and social damages to health system.<sup>6,7</sup>

Therefore, authorities should be able to evaluate the extent of the problem, recognize signs and symptoms, understand the contributing factors, and use educational interventions to prevent substance harms.<sup>8,9</sup>

Recent studies in Iran emphasized that substance abuse among university students has become a subject of concern. Investigations among a sample of Iranian nursing students<sup>10</sup> or among students of Guilan University of Medical Sciences (GUMS)<sup>11</sup> revealed that nearly one third of students reported usage of substance(s) once or more during their lives, and the most prevalent used substances were cigarette, alcohol and opium which were considerable problem.

Considering that our population is mainly young students who are faced with different types of social risks, we designed a study to evaluate the substance abuse among students of Zanjan's universities.

## Methods

### Study population and sampling

This study was carried out among students of three universities in Zanjan Province; Zanjan University, Zanjan University of Medical Science and Zanjan Azad University in 2010. 1340 subjects were selected by stratified random sampling method and 1200 finished the study. These

subjects studied in 4 educational levels: 352 for associate degree, 731 for under graduated degrees, 34 for MSc and 83 were studying in PhD or MD level.

### Study definition

We designed a standard questionnaire to evaluate substance abuse prevalence among university students. 25 questionnaires were distributed among students and its reliability was analyzed (Cronbach's alpha = 0.89). Its content validity was confirmed by two psychologists. Subjects were informed how to fill this questionnaire and informed consent was obtained. They were also ensured of their information confidentiality. Students' demographic information, abused material types (including: hookah, cigarette, codeine, ibuprofen, alcohol, diazepam, tramadol, cannabis, opium, grass, heroin, crack, X pill, morphine, marijuana, Librium, and LSD), motivation factors, past medical history, and prevalence of substance abuse were obtained by this questionnaire. Students who used some kind of substance (physician's order) such as codeine, ibuprofen, tramadol, morphine and diazepam were excluded from the main study.

### Statistical analysis

Data were evaluated by SPSS software version 11 (SPSS, Inc., Chicago, IL, USA). Mean values ( $\pm$  standard error of mean) and ranges were reported. Descriptive statistical methods were used where appropriate. Chi-square was used to test the frequencies and t-test was used to compare means. Statistically significant P-value was considered as  $P < 0.050$ .

## Results

Among 1800 university students, a total of 1200 students completed the main survey. Demographic information of subjects is summarized in table 1; 555 (46.2%) subjects were male and 645 (53.8%) were female. All subjects were categorized in 3 groups of under 20 years, 21-23 years old and over 24 years old. Prevalence of substance abuse was estimated 1.8% in the first group, 4.06% in the second and 5.45% in the last one which showed statistically significant difference ( $P = 0.045$ ).

According to DSM-IV, 43 (2.5%) of total subjects had complete criteria of substance abuse. 35 (81.4%) were male and 8 (18.6%) were female

( $P < 0.001$ ). The mean age of drug abuse onset was estimated 19.4 years old. Our investigation showed that substance abuse had strong correlation with age ( $P = 0.045$ ). By excluding students who used some kind of substance such as codeine, ibuprofen, tramadol, morphine and diazepam based on physician's prescription, 484 (40.3%) of subjects [268 (48.2%) male and 216 (33.4%) female] had an experience of substance use at least once.

**Table 1.** Demographic characteristics of university students with substance abuse history

Characteristic	Total number n = 1200	
Gender		
Male	555 (53.8%)	
female	645 (46.2%)	
Mean age	21.3 ± 2.34	
	Male	Female
Mean beginning age (years)	Total: 19.45	
Hookah	18.3	18.9
Alcohol	18.3	19.2
Cigarette	18.4	19.6
Tramadol	20.2	18.5
Opium	20.0	19.0
Cannabis	20.7	20.0
Marital state		
Single	1078	
Married	115	
Divorced	4	
Residency place		
Dormitory	540	
Private	660	
Motivating factors		
Pain relief	32.7%	
Pleasure	13.3%	
Curiosity	9.3%	
Loneliness	8.4%	
Friend encouragement	7.9%	
Educational problem	5.2%	
- Family problem	5.0%	
- Economical problem	5.0%	
- Sexual problem	4.3%	
- Others (unemployment, enjoyment...)	5.7%	

Totally, 6.3% of male and 1.2% of female subjects was addicted constantly ( $P < 0.001$ ). That was 13%, 5.6% for hookah, 6% and 0.5% for alcohol abuse, 1.5% and 0.1% for cannabis in male and female, respectively. Opium was abused 1.5% and 0.08% among male and female students.

According to table 2, hookah with 18.8% usage in students and LSD with 0.1% had the highest and lowest percentage of abuse, respectively. Codeine, cigarette and alcohol were the next drugs (16.5%, 16.1% and 6.5%) (Table 2). In addition, 17 (1.4%) subjects were alcohol, 5 (0.4%) were tramadol and 4 (0.23%) students were cannabis abusers and met substance abuse criteria (Figure 1).

This study demonstrated that the main motivation factors of substance abuse among students were pain relief (32.7%), seeking pleasure (13.3%), and curiosity (9.3%) (Table 1). In our study, 22 subjects had documented history of psychological disorder (diagnosed by psychologist). 5 (22.7%) subjects with psychological disorder and 38 (33.2%) subjects without any history were substance abuser. Thus, there was a strong association between substance abuse and psychological disorder.

## Discussion

Although a lower substance abuse rate was shown in comparison with the other studies, results of our investigation indicated high feasibility of substance abuse among students. By conducting this study in three big universities, we tried to evaluate effect of different environmental factors which can affect prevalence of substance abuse in university students.

Students' attitude for special substance abuse, social acceptance of substance abuse and availability of substance can be considered as effective factors of tendency to substance usage. We also demonstrated that substance availability among students, substance expense, and its illegality were the other factors influenced substance abuse in universities.

In spite of extensive information about its serious complications, we found high prevalence of hookah smoking among university students with average age of 21.3. Nearly half of male subjects and females had history of substance usage at least one time.

A study in Tabriz in 2007 on medical students showed that 32% had history of substance abuse in previous 6 months of their study and there was history of illegal drug abuse at least one time in 24% of subjects during their life.<sup>12</sup> The other study in Shahid Beheshti University of Medical science

revealed 82% of males and 32% of female subjects abused substance at least one time<sup>13</sup>

Table 2. Prevalence of substance abuse among students of Zanjan's universities

Substance material type	Average age of beginning abuse	Substance abuse frequency (percent)	Substance usage times		
			Daily and regular usage (percent)	Occasionally (percent)	Daily and regular usage (percent)
Hookah*	18.6	17.0	4.2	13.0	1.5
Cigarette*	16.5	16.0	3.1	8.7	3.4
Codeine	16.5	16.0	3.9	12.5	0.1
Ibuprofen	11.5	16.2	0.3	3.3	7.9
Alcohol	6.5	18.1	1.5	4.5	0.5
Diazepam	2.9	18.6	0.8	1.8	0.2
Tramadol	2.0	20.0	0.6	1.2	0.2
Cannabis	1.7	19.7	0.6	0.9	0.1
Opium	1.5	20.0	0.8	0.5	0.1
Grass	1.0	21.8	0.4	0.5	-
Heroin	0.4	22.0	0.2	0.1	-
Crack	0.4	21.6	0.4	-	-
X pill	0.4	19.6	0.2	0.2	-
Morphine	0.3	18.5	-	0.3	-
Marijuana	0.2	19.0	0.1	0.1	-
Librium	0.2	20.6	-	0.1	0.1
LSD	0.1	20.5	0.2	-	-

\* According to DMS-IV criteria, cigarette smoking and Hookah are not considered as drug abuse

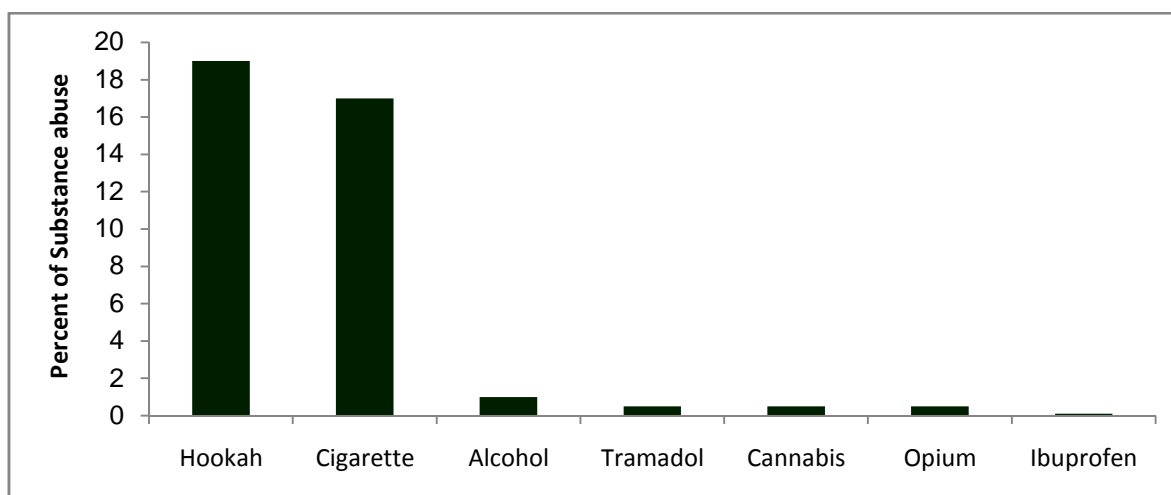


Figure 1. Substance use among the students of Zanjan's Universities

According to DMS-IV criteria, cigarette smoking and Hookah are not considered as drug abuse

which had higher prevalence of substance abuse among male subjects but lower prevalence among females compared to our study. Sing and his colleagues in Panjab demonstrated that 7 out of 10 students had history of substance abuse.<sup>14</sup> 2.3% of Canadian students reported using at least 1 of 5 illicit drugs by injection during their lifetime (2600 students from 7800 participants).<sup>5</sup>

In our study, average of beginning age for hookah smoking was 18.3 years for male and 18.9 years for female. This average for cigarette smoking was 18.4 years in male and 19.1 years in

female and for tramadol it was 20.2 years in male and 18.5 years in female.

A study in Medical Shiraz University which evaluated 532 university students, showed average of beginning age for cigarette smoking was higher among female students than male one except tramadol and opium abuse.<sup>15</sup> This finding was repeated in our study too.

6.3% of male students and 1.2% of females were substance abuser in our study which was significantly higher in males than females. 4.4% of students in Shiraz University of Medical Science

(4.2% male and 0.2% female) were mentioned to be substance abuser.<sup>16</sup>

Pain relief, seeking pleasure, and being curious were found to be as the three most common reasons of substance abuse among university students. In the study performed in Shahid Beheshti University, the main motivating factors were anxiety (34.4%), seeking pleasure, being curious, and somatic pain relief<sup>13</sup> which was in the line with our study. An investigation in Tehran University among female students who entered university in 1999 revealed these factors were pain relief (33.5%), anxiety (33.2%), and being curious (24.2%).<sup>17</sup> Pain relief and being curious were the same reasons in our study and these two studies.

It seems that alcohol is a main substance used among American and European students. For example, in a study, among 7800 subjects in Canadian universities it was revealed that 62.8% of subjects had history of alcohol drinking five times or more during a year.<sup>18</sup> In our study, alcohol usage prevalence was estimated 6.5% which 1.5% of them had previous history, 4.5% drink occasionally and 0.5% had history of daily alcohol usage.

Result of a study among medical students of Shahid Beheshti University showed that alcohol usage prevalence was 27.6% in male and 1.1% in female.<sup>12</sup> 8.3% of female students of Tehran University who entered in 1999 had history of alcohol abuse.<sup>17</sup> In Tabriz University, this result reached to 16% among male subjects of dormitories. In Shiraz University, among 213 subjects, 25% had drunk alcohol at least one time during their life.<sup>19,20</sup> These results showed lower alcohol abuse in Zanzan universities. Results in Shahid Beheshti University revealed that 7.8% of male and 0.3% of females had tried opium once and 1.1% male and 0% of female had tried Heroin.<sup>15</sup> Heroin usage in Tabriz and Shiraz was 2% and 1%, respectively.<sup>12,21</sup>

In Tabriz University, 6% of students had opium usage history in previous 6 months and in Shiraz University, the prevalence of opium usage during life was estimated 12%.<sup>19</sup> A study conducted in UK reported that 69% of male subjects and 55% of female subjects consumed cannabis one or two times during study and 20% abused regularly.<sup>22</sup> Among American students, this rate reached to 32.3% and in Canada, 47% of

students mentioned cannabis abuse occasionally.<sup>20</sup>

## Conclusion

The average age of most abusers was 18-20 years and the main motivation factors were considered as pain relief, being curious, loneliness and friends encourage. Thus, it seems that we require goal directed programs to reduce and control the prevalence of substance abuse, raise student's awareness and increase students' information about substance disadvantages, especially in their entrance to university.

## Limitation

We evaluated university students by a special type of questionnaire through self-report. According to the fact that substance abuse in our country has its own legal problem, it could affect the students' responses and validity and reliability of questionnaire. To increase its validity and reliability, we tried to solve this problem by designing multiple choice questionnaires without participants' name or address, distribution of questionnaire among students groups (not alone) and give them complete information about how to fill questionnaire.

We cannot generalize these results to all students' population because of different lifestyle, familial, economical, and social state. We tried solving this problem to some extent by choosing students of different universities to uniform our sample, reduce our study bias and obtain more homogenous information about them. Students experience different condition in each university and various factors influence their attitude.

## Conflict of Interest

The Authors have no conflict of interest.

## Acknowledgements

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## سوء مصرف مواد در میان دانشجویان دانشگاه‌های زنجان، یک گره در جامعه امروز

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### مقاله پژوهشی

#### چکیده

**مقدمه:** مطالعه توصیفی حاضر به منظور ارزیابی وضعیت سوء مصرف مواد مخدر و احتمال وابستگی به مواد در میان دانشجویان دانشگاه‌های زنجان طراحی گردید.

**روش‌ها:** از میان دانشجویان دانشگاه‌های زنجان، ۱۲۰۰ دانشجو با استفاده از روش نمونه‌گیری تصادفی انتخاب شدند. اطلاعات دموگرافیک و سابقه سوء مصرف مواد مخدر در دانشجویان از جمله قلیان، سیگار، کدئین، ایبوپروفن، الکل، دیازپام، ترامادول، شاهدانه، تریاک، سیگار، هروئین، کراک، قرص اکس، مورفین، ماری‌جوآنا، لیبریوم و ال‌اس‌دی با استفاده از پرسش‌نامه استاندارد مورد پرسش و تجزیه و تحلیل قرار گرفت.

**یافته‌ها:** متوسط سن دانشجویان  $21/3 \pm 2/3$  سال (محدوده ۱۸-۳۸ سال) و متوسط سن شروع سوء مصرف مواد مخدر، ۱۹/۴۵ سال بود. ۴۸/۲ درصد از دانشجویان پسر و ۲۳/۴ درصد دختر بودند و حداقل یک بار سابقه سوء مصرف مواد مخدر را داشتند. ۶/۳ درصد مردان و ۱/۲ درصد از زنان به طور مداوم معتاد به مواد مخدر بودند که از نظر آماری در مردان نسبت به زنان تفاوت معنی‌داری مشاهده شد ( $P < 0/005$ ). انگیزه اصلی در ۳۲/۷ درصد موارد، درد و در ۱۳/۳ درصد به دنبال کسب لذت بیان شد. قلیان با ۱۸ درصد و ال‌اس‌دی با ۱ درصد به ترتیب کمترین و بیشترین درصد استفاده از مواد مخدر بودند.

**نتیجه‌گیری:** سوء مصرف مواد در مردان بیشتر از زنان بود. همچنین، نتایج آماری نشان دهنده میزان بالاتر درگیری در دانشجویان با درجه علمی و سن بالاتر و نیز سابقه وجود اختلال روانی بود. به نظر می‌رسد، تدوین یک برنامه هدفمند برای کنترل و کاهش شیوع سوء مصرف مواد، بالا بردن آگاهی و افزایش اطلاعات دانشجویان در مورد معایب مواد به ویژه در زمان ورود دانشجویان الزامی است.

**واژگان کلیدی:** سوء مصرف مواد، اعتیاد، دانشجویان دانشگاه

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