Abstract

Objective: This study was aimed to determine the prevalence of drug use among College Students of Ministry of Science, Research and Technology in Iran. **Method:** In this cross-sectional study, the number of 7330 male and female students of mother universities of the province centers in the academic year 2011-2012 was selected by random stratified sampling method. Drug Use Prevalence Questionnaire (Taremian, Bolhari & Peyravi, 2007) with some modifications pertinent to the purpose of the study was used for data collection. **Results**: Tobacco via Hubble bubble (classical pipe) took up the highest frequency of use among drugs (28.7%), after which come other substances including cigarette smoking (20.4%), alcohol consumption (11.9%), and opium use (3.1%), respectively. Among the licit drugs, the most prevalent drugs were codeine substances (19.8%), diazepam (3.6%), fluoxetine (1.9%), and tramadol (4.2%). Use of different substances was significantly more prevalent in male students. **Conclusion:** Using soft drugs (tobacco via Hubble bubble, cigarette, and alcohol) was more prevalent than hard drugs (Hashish, opium, crack, heroine, etc.) among Iranian students.

Keywords: Addiction Prevalence, Substance Use, Student, Ministry of Science, Research and Technology

Drug use Prevalence among College Students of Ministry of Science, Research and Technology, Iran (2012)

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Introduction

In recent years, the persistence and sustainability of multiple social injuries and sometimes the appearance of new problems in this area have given rise to tumultuous conditions. Drug use among youth is an extensive lasting harm with tenacious personal and social consequences that is still continuing its growth due to its dynamic and variable nature despite years of fighting against the supply of drugs and use of modern scientific methods in order to reduce demands for drug use and prevent it. As a result, it is required to directly approach this issue in a problem-centered, evidence-based, and up to date manner. Especially given that in a short time with the rise in methamphetamine group such as crystal, the use of it has received a widespread and precipitous popularity; therefore, a serious alarm and warning sound has been rung and the mind of every person critical to social issues has been preoccupied with this issue.

The student population of the country are also among the groups at risk of substance use, a phenomenon whose experimental and recreational use and consequent addiction and compulsion to use more of it still continue. Several studies conducted in other countries, have reported smoking, alcohol consumption, and marijuana use to be at play among the student population. In this regard, today, relevant authorities should take preventive measures to reduce the consumption of these substances. In Iran, the conduct of such studies has started since few years and valid questionnaire surveys are increasingly being conducted in this field. For example, Taremian, Bolhari & Peyravi (2007) conducted their research in six major universities of Tehran on student population in terms of the prevalence of drug use and risk factors associated with it for the first time. The purpose of the current study is to carry out a more comprehensive survey of drug use among students across the country. For this purpose, the modified Taremi, et al's Drug Use Prevalence Questionnaire was slightly modified (Yaghoubi, Asgari, Taremian & Peyravi, 2012) and was used to conduct the first national study on the prevalence of drug use among students and the risks associated with it. Few studies, if any, have been conducted in the context of drug abuse among university students in Iran that are even methodologically problematic. Serajzadeh & Feizi (2004) did a study on 5231 students from 21 universities of the Ministry of Science and found that 21.4% of students have smoked cigarette only once or twice, but 12.2% of them smoked at the time of research conduct. However, 20% of students stated that they have consumed alcohol at least once, and 10% mentioned that they have taken at least once opium. After opium, the substances of cannabis, refined opium extract, and opium dross were more prevalent among students with the frequencies of 3.8%, 2.3%, and 2.2%, respectively. Karbakhsh & Salehian Zandi (2007) also showed that consumption of narcotics and consequent poisoning took up the highest frequency in the 20-29-year age range.

Kordmirza, Azad & Eskandari (2003) undertook a study on the students of medicine, engineering, arts, and humanities at the University of Tehran and showed that 16.3% of students of arts, 8.85% of students of humanities, 6% of technical engineering students, and 5% of medical students have admitted drug use. Taremian et al. (2007) found that 34% of students have admitted that they have smoked tobacco via Hubble bubble at least once, 24% of them have tested smoking, 17% have taken alcohol, 2.3% have tested opium, and 2.2% of them have tested cannabis. In addition, .7% have taken ecstasy and crystal and .2% of them have experienced using heroin and crack.

Related studies have shown that the problem of drug use among students is one of the serious socio-psychological ills in academic environments and the neglect of the increasing trend in drug use and related problems in the student population (Taremian et al., 2007; Zarabi et al., 2008) and the existence of laboratory substances (synthetic) such as crystal and ecstasy have augured an imminent extensive and widespread danger.

However, the following factors inform the need for planning and the development of preventive interventionist strategies in universities: insufficiency of related research, lack of reliable statistical data, anonymity of students' motivation in substance use, methods and patterns of substance use, prevalence of drug use, and also the association of drug use with studenthood problems such as educational amotivation, academic failure, mental illness, aggressive behavior, and feeling of identity diffusion. The necessary condition for any planning includes having information about the existing situation and drawing the status quo of drug use among students. At present, experts believe that the identification of drug use prevalence is the first step in the design of preventive programs. Therefore, as part of a macro-level study which investigates the epidemiology of drug use and the risk and protective factors among students of Medical Sciences in Tehran Universities, the current study was aimed at determining the prevalence of drug use among College Students of Ministry of Science, Research and Technology in Iran.

Method

Population, sample, and sampling method

This study was conducted based on a survey plan. The statistical population of this study consisted of all bachelor, master, and PhD students in public universities of province centers in the academic year 2011-2012. The sample size was estimated about 7330 students who were selected by stratified random sampling.

Instrument

Drug Use Prevalence Questionnaire (Taremian, Bolhari & Peyravi, 2007): This questionnaire was developed to estimate the extent of drug use and risk

factors among students of Universities of Medical Sciences in 2006. This questionnaire was validated based on a qualitative survey plan on a sample size of 852 students at public universities (135 female and 130 male students). The results showed that risk and protective factors in drug use among students can be divided into five categories, namely individual class, university-related class, social class, peers, and family (Yaghoubi et al., 2012). According to the information obtained from this stage of the study, some modifications were made in the initial version of the questionnaire and, thereby, a questionnaire was developed which includes the following sections:

A) Demographic information: In this section, relatively comprehensive information is obtained from the personal and familial aspects.

This section is divided into two categories of personal information and family information. In terms of personal information, additional information about the prevalence of drug-related variables such as type of accommodation (dormitory, student houses, etc.) has been inserted in addition to physical characteristics (weight and height), educational background in senior high school, university entrance exam, etc. In family part, it has been attempted to obtain comprehensive information on parental educational and occupational background, socioeconomic status, religion, etc.

B) Information pertaining to the prevalence of drug use: In this section, some questions have been included to obtain comprehensive information on subsatnce type, age, age of initiating drug use, the time and duration of drug use (such as experience of drug consumption in lifetime, the amount of drug use in the last month and year), etc. based on background and empirical and theoretical evidence. Although up to 22 substances and drugs are evaluated in the revised version of the instrument, the following taxonomy has been presented to provide better conditions: cigarette and tobacco via Hubble bubble, alcohol, hard drugs (cannabis, ecstasy, opium, heroin, crack, crystal, LSD), drugs and pills (ritalin, tramadol, morphine, pethidine, methadone, diphenoxylate, diazepam, codeine, fluoxetine), other substances (norgesic, Pan Prague and Naas).

C) Classification of risk factors: This is actually the most comprehensive questionnaire section and includes the questions that cover an appropriate scope of risk factors in relation to the prevalence of substance abuse. Due to the diversity of the risk factors of division in terms of theoretical and empirical studies relating to the prevalence of drug use, efforts have been made to enter these factors based on theoretical classification into the study and employ sophisticated statistical analyses so that a more detailed explanation of the prevalence of drug use can be provided. Therefore, these factors were divided into five categories based on the study of scientific resources and research findings and using the information obtained from group discussion sessions with students.

Personal factors (psychological/ personality/ attitudinal characteristics): The number of 43 items has been considered based on empirical and theoretical

literature to measure psychological, personality, and attitudinal characteristics and also evaluate the risk factors affecting the psychological and personality characteristics of participants. The results of the factor analysis of these items led to six final factors which accounted for 58% of the total variance. These factors are lack of adherence to religion, self-esteem, anxiety and stress, attention-seeking, sensation-seeking and novelty-seeking, and negative attitude to university. The reliability coefficients of the six factors range from .55 to .86 which indicate good internal consistency. In addition, 30 other items were considered to assess the psychological status of students which contain two main factors, namely anger-aggression and anxiety-depression. These two factors together explain 46.7% of the total variance. The reliability coefficients of the two factors were .75 and .67, respectively, which indicate good internal consistency.

Family factors: Three scales of positive attitude of the family toward substances, lack of intimacy in the family, and substance consumption in the family were used to measure this factor. The items considered for this factor were intended to determine family's attitude towards the incorrectness of drug use, intimacy and how to communicate with family, and substance abuse (cigarette and tobacco, narcotics, and psychotropic substances, and drugs) in family members and close relatives of the person (grandparents, uncles, and aunts). These items are scored based on a 4-point Likert scale and higher score represents the greater role of this component as a risk factor. The reliability coefficients for these three scales were .94, .88, and .78, respectively, which represent good internal consistency for these scales.

Factors pertinent to university (attitudinal): Two scales were used to evaluate the person's attitude towards the environment and conditions of their universities. These two scales were developed to measure attitude towards the prevalence of drug use on campus and negative attitude to university with the reliability coefficients of .95 and .78, respectively.

Peers: This factor has been measured with two subscales of positive attitudes of peers to drugs and drug use in peers. Reliability coefficients for these scales were reported .90 and .78, respectively.

Social factors (environmental): This factor measures ease of access to drugs and alcohol at university, dormitory, and town.

Procedure

From each of the counseling centers of the thirty selected universities, one expert was invited and the necessary administrative issues relating to before, during, and after the implementation were carefully explained in the form of a workshop. Furthermore, the instructions on how to administer the questionnaire before, during and after its completion by the respondents, along with important tips on collecting accurate data from the questionnaires were provided to the

examiners in written. Therefore, the questionnaires were distributed among the thirty universities of province centers during April and May 2012. For the confidentiality of the responses and the increase of accuracy, all the examiners reiterated that the respondents refrain from mentioning their names before the distribution of the questionnaires. In addition, a specific location was determined to put the completed questionnaires in each class. Then, the completed questionnaires were put in special packages and the specifications pertaining to university, discipline, date of administration, and the number of respondents were written on each package. It is noteworthy that before the administration of the questionnaires, the students were explained that they are allowed to resign participating in the research.

Results

The descriptive statistics of the samples are presented in the following table for each location and university.

Table 1: Frequency distribution of the samples for each location and university

Order	*Location*	*University*	*N.*
1	Tehran	Tehran	798
2	Gilan, Mazandaran, and Golestan	Gilan	213
3	Gilan, Mazandaran, and Golestan	Mazandaran	296
4	Gilan, Mazandaran, and Golestan	Golestan	199
5	Khorasans	North Khorasan	113
6	Khorasans	Razavi Khorasan	490
7	Khorasans	South Khorasan	211
8	Sistan & Baluchestan and Kerman	Sistan & Baluchestan	305
9	Sistan & Baluchestan and Kerman	Kerman	432
10	Bushehr and Hormozgan	Hormozgan	224
11	Bushehr and Hormozgan	Bushehr	323
12	Khuzestan	Khuzestan	599
13	Esfahan and Fars	Fars	364
14	Esfahan and Fars	Esfahan	121
15	Markazi, Qom, Semnan, Yazd, and Qazvin	Markazi	157
16	Markazi, Qom, Semnan, Yazd, and Qazvin	Qom	139
17	Markazi, Qom, Semnan, Yazd, and Qazvin	Semnan	192
18	Markazi, Qom, Semnan, Yazd, and Qazvin	Yazd	206
19	Markazi, Qom, Semnan, Yazd, and Qazvin	Qazvin	127
20	Lorestan, Chaharmahal and Bakhtiari, and Boyer-Ahmad	Lorestan	158
21	Lorestan, Chaharmahal and Bakhtiari, and Boyer-Ahmad	Chaharmahal and Bakhtiari	267
22	Lorestan, Chaharmahal and Bakhtiari, and Boyer-Ahmad	Kohgiluyeh and Boyer-Ahmad	46
23	Kurdistan, Kermanshah, Ilam, and Hamedan	Kurdistan	127

Order	*Location*	*University*	*N.*
24	Kurdistan, Kermanshah, Ilam, and Hamedan	Kermanshah	172
25	Kurdistan, Kermanshah, Ilam, and Hamedan	Ilam	72
26	Kurdistan, Kermanshah, Ilam, and Hamedan	Hamedan	210
27	East Azerbaijan, West Azerbaijan, Ardebil, and Zanjan	West Azerbaijan	206
28	East Azerbaijan, West Azerbaijan, Ardebil, and Zanjan	East Azerbaijan	242
29	East Azerbaijan, West Azerbaijan, Ardebil, and Zanjan	Ardebil	122
30	East Azerbaijan, West Azerbaijan, Ardebil, and Zanjan	Zanjan	199

The descriptive statistics of the demographic characteristics of the samples are presented in the table below.

Table 2: Descriptive statistics on the demographic characteristics of the sample

Features	*N.*	*Percentage*	*Features*	*N.*	*Percentage*
Father's education			PhD	47	.6
Illiterate	563	7.7	Religious education	17	.2
Literacy	410	5.6	Unspecified	503	6.9
Primary school	883	12	Parents' lifestyle		
Junior high school	769	10.5	Married life	6143	83.8
Senior high school and diploma	1812	24.7	Divorce	101	1.4
Associate's degree	703	9.6	Death	462	6.3
Bachelor's degree	1179	16.1	Unspecified	624	8.5
Master's degree	318	4.3	Father's employment		
PhD	163	2.2	Employed	4367	59.6
Religious education	21	.3	Unemployed	411	5.6
Unspecified	509	6.9	Retired	1669	22.8
Mother's education			Pensioner	131	1.8
Illiterate	880	12.0	Unspecified	752	10.3
Literacy	691	9.4	Mother's employment		
Primary school	۱۱۰۵	15.1	Employed	1076	14.7
Junior high school	880	12.0	Unemployed	5145	70.2
Senior high school and diploma	1831	25.0	Retired	483	6.6
Associate's degree	533	7.3	Pensioner	66	.9
Bachelor's degree	691	9.4	Unspecified	560	7.6
Master's degree	152	2.1			

Descriptive statistics of drug use prevalence are presented in the table below during lifetime, past year, and past month.

Table 3: Descriptive statistics of drug use prevalence during lifetime, past year, and month

	Lifetime		*Past year*		*Last month*	
Substance	***N***	***Percentage***	***N***	***Percentage***	***N***	***Percentage***
Cigarette	1492	20.4	910	12.4	675	9.2
Tobacco	2102	28.7	1312	17.9	851	11.6
Alcohol	872	11.9	577	7.9	338	4.6
Cannabis	202	2.8	143	2.0	93	1.3
Ecstasy	94	1.3	52	.7	38	.5
Ritalin	150	2.0	92	1.3	52	.7
Opium	224	3.1	94	1.3	64	.9
Heroin	55	.8	32	.4	28	.4
Crack	64	.9	33	.5	27	.4
Crystal	92	1.3	45	.6	29	.4
Tramadol	307	4.2	135	1.8	78	1.1
LSD	58	.8	35	.5	26	.4
Diphenoxylate	115	1.6	58	.8	35	.5
Diazepam	266	3.6	115	1.6	55	.8
Methadone	149	2.0	60	.8	41	.6
Codeine	1448	19.8	661	9.0	438	6.0
Fluoxetine	141	1.9	68	.9	42	.6
Norgesic	60	.8	37	.5	29	.4
Pan Prague	71	1.0	38	.5	31	.4
Morphine	112	1.5	52	.7	39	.5
Naas	116	1.6	72	1.0	47	.6
Pethidine	60	.8	43	.6	34	.5

As it is observed in the above table, tobacco, cigarette, and alcohol have taken up the highest frequency of consumption during lifetime, past month, and past year, respectively, although codeine use has been reported higher than alcohol consumption. It is noteworthy that the lowest frequency of use was relate to heroin.

Prevalence of drug use for males and females has been reported in the following table.

Table 4: Prevalence of drug use for male and female students (2012)

Substance	*Lifetime*				*Past year*				*Last month*			
	Female		*Male*		*Female*		*Male*		*Female*		*Male*	
	N	*Percentage*	*N*	*Percentage*	*N*	*Percentage*	*N*	*Percentage*	*N*	*Percentage*	*N*	*Percentage*
Cigarette	420	11.2	1015	31.7	211	5.6	660	20.6	129	3.4	513	16.0
Tobacco	733	19.6	1294	40.4	394	10.5	870	27.2	228	6.1	588	18.4
Alcohol	236	6.3	596	18.6	133	3.6	418	13.1	64	1.7	251	7.8
Cannabis	50	1.3	134	4.2	42	1.1	86	2.7	29	.8	50	1.6
Ecstasy	24	.6	61	1.9	18	.5	28	.9	13	.3	19	.6
Ritalin	47	1.3	97	3.0	33	.9	54	1.7	17	.5	30	.9
Opium	53	1.4	165	5.2	18	.5	71	2.2	11	.3	48	1.5
Heroin	10	.3	41	1.3	9	.2	20	.6	8	.2	17	.5
Crack	12	.3	46	1.4	10	.3	19	.6	8	.2	16	.5
Crystal	22	.6	65	2.0	14	.4	27	.8	9	.2	17	.5
Tramadol	62	1.7	233	7.3	24	.6	107	3.3	13	.3	61	1.9
LSD	17	.5	37	1.2	9	.2	22	.7	8	.2	16	.5
Diphenoxylate	51	1.4	58	1.8	21	.6	33	1.0	12	.3	20	.6
Diazepam	106	2.8	154	4.8	41	1.1	70	2.2	18	.5	34	1.1
Methadone	45	1.2	96	3.0	14	.4	42	1.3	7	.2	30	.9
Codeine	815	21.8	597	18.7	397	10.6	247	7.7	263	7.0	161	5.0
Fluoxetine	64	1.7	72	2.3	30	.8	33	1.0	18	.5	20	.6
Norgesic	17	.5	39	1.2	12	.3	21	.7	8	.2	17	.5
Pan Prague	13	.3	54	1.7	9	.2	25	.8	8	.2	19	.6
Morphine	36	1.0	71	2.2	17	.5	31	1.0	13	.3	22	.7
Naas	25	.7	86	2.7	18	.5	50	1.6	10	.3	33	1.0
Pethidine	12	.3	44	1.4	11	.3	28	.9	8	.2	22	.7

The data in the table indicate that tobacco use, cigarette smoking, and alcohol consumption on male students are 2 to 5 times as large as those in female students. In the same way, the use of such drugs as cannabis, ecstasy, opium, and crystal is 2 to 3 times as large as that in female students although codeine consumption in female students is higher than that in male students. In the previous month, male students have most frequently used such drugs as tramadol, cannabis, and opium after cigarette, tobacco, alcohol, and codeine. This is so while female students have taken codeine more than any other substances such as cigarette, tobacco, and alcohol. In this group, tobacco, cigarette, and alcohol; cannabis, Ritalin, and diazepam took up the highest frequency after codeine, respectively.

Prevalence of the use of classified drugs are presented in the table below during lifetime, past year, and past month.

Table 5: Prevalence of the use of classified drugs during lifetime, past year, and past month

Substance	*Lifetime*		*Past year*		*Past month*	
	N	*Percentage*	*N*	*Percentage*	*N*	*Percentage*
Cigarette or tobacco	2285	31.2	1450	19.8	1041	14.2
Alcohol	872	11.9	577	7.9	338	4.6
Hard drugs	348	4.7	193	2.6	123	1.7
Drugs	1672	22.8	807	11.0	519	7.1
Other substances	145	2.0	79	1.1	51	.7

As it is seen in the above table, more than 31% of the students during their life time, about 20% during the last year, and more than 14% of them in the past month have been smokingcigarette or tobacco.

Prevalence of drug use during lifetime, last year, and last month for males and females has been presented in the table below.

Table 6: Prevalence of drug use during lifetime, last year, and last month for males and females

Substance	**Lifetime**				**Past year**				**Past month**			
	Female		**Male**		**Female**		**Male**		**Female**		**Male**	
	N	**Percentage**	**N**	**Percentage**	**N**	**Percentage**	**N**	**Percentage**	**N**	**Percentage**	**N**	**Percentage**
Cigarette or tobacco	799	21.3	1405	43.9	435	11.6	962	30.1	261	7.0	737	23.0
Alcohol	236	6.3	596	18.6	133	3.6	418	13.1	64	1.7	251	7.8
Hard drugs	95	2.5	235	7.3	50	1.3	125	3.9	33	.9	74	2.3
Drugs	882	23.6	746	23.3	436	11.6	351	11.0	283	7.6	219	6.8
Other substances	35	.9	105	3.3	21	.6	54	1.7	11	.3	36	1.1

As it can be seen in the above table, cigarette smoking, tobacco smoking, and alcohol drinking during lifetime, past year, and past month for male students has been from 2 to 3 times as large as that in female students. The consumption of hard drugs in male students was about 3 times as large as that in female students while the use of drugs and pills has been higher in female students than that in male students during last month and last year.

Prevalence of drug use is presented in the table below for each province. It should be noted that Tehran; Gilan, Mazandaran, and Golestan; Khorasans; Kerman and Sistan and Baluchestan; Hormozgan and Bushehr; Khuzestan; Isfahan and Shiraz; Markazi, Qom, Semnan, Yazd, and Qazvin; Lorestan, Chahar Mahal and Kohkilooyeh; Kurdistan, Kermanshah, Ilam, and Hamadan; and Azerbaijan, Ardebil, and Zanjan ranked the better orders, respectively.

Table 7: Prevalence of drug use for each province and substance

Substance	*Statistic*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
Cigarette	N	145	88	76	45	56	57	72	105	46	47	173
Tobacco	Percentage	18.2	12.4	9.3	6.1	10.2	9.5	14.8	12.8	9.8	8.1	22.5
Alcohol	N	192	130	134	95	80	82	90	164	74	78	193
Cannabis	Percentage	24.1	18.4	16.5	12.9	14.6	13.7	18.6	20.0	15.7	13.4	25.1
Ecstasy	N	119	69	53	36	37	25	52	52	24	23	87
Ritalin	Percentage	14.9	9.7	6.5	4.9	6.8	4.2	10.7	6.3	5.1	4.0	11.3
Opium	N	44	25	12	6	10	3	14	9	3	5	12
Heroin	Percentage	5.5	3.5	1.5	.8	1.8	.5	2.9	1.1	.6	.9	1.6
Crack	N	17	9	5	3	5	1	3	3	1	4	1
Crystal	Percentage	½	1.3	.6	.4	.9	.2	.6	.4	.2	.7	.1
Tramadol	N	15	31	9	4	6	2	10	5	4	4	2
LSD	Percentage	1.9	4.4	1.1	.5	1.1	.3	2.1	.6	.8	.7	.3
Diphenoxylate	N	12	17	13	6	13	2	9	7	5	6	4
Diazepam	Percentage	1.5	2.4	1.6	.8	2.4	.3	1.9	.9	1.1	1.0	.5
Methadone	N	8	5	6	2	3	1	1	1	0	3	2
Codeine	Percentage	1.0	.7	.7	.3	.5	.2	.2	.1	0	.5	.3
Fluoxetine	N	10	4	6	1	3	1	1	2	0	3	2
Norgesic	Percentage	1.3	.6	.7	.1	.5	.2	.2	.2	0	.5	.3
Pan Prague	N	15	5	8	1	3	1	4	2	0	5	1
Morphine	Percentage	1.9	.7	1.0	.1	.5	.2	.8	.2	0	.9	.1
Naas	N	14	20	16	9	11	4	12	10	6	8	25
	Percentage	1.8	2.8	2.0	1.2	2.0	.7	2.5	1.2	1.3	1.4	3.3
Cigarette	N	9	5	5	2	4	1	1	1	0	3	4
Tobacco	Percentage	1.1	.7	.6	.3	.7	.2	.2	.1	0	.5	.5
Alcohol	N	9	8	6	10	6	3	3	3	2	5	3
Cannabis	Percentage	1.1	1.1	.7	1.4	1.1	.5	.6	.4	.4	.9	.4
Ecstasy	N	22	15	10	7	8	4	4	11	5	8	21
Ritalin	Percentage	2.8	2.1	1.2	.9	1.5	.7	.8	1.3	1.1	1.4	2.7
Opium	N	15	8	9	4	7	1	5	4	1	3	3
Heroin	Percentage	1.9	1.1	1.1	.5	1.3	.2	1.0	.5	.2	.5	.4
Crack	N	48	82	113	58	48	42	29	75	40	60	66
Crystal	Percentage	6.0	11.6	13.9	7.9	8.8	7.0	6.0	9.1	8.5	10.3	8.6
Tramadol	N	16	11	8	3	5	4	2	7	2	6	4
LSD	Percentage	2.0	1.6	1.0	.4	.9	.7	.4	.9	.4	1.0	.5
Diphenoxylate	N	10	5	6	2	3	1	1	2	0	4	3
Diazepam	Percentage	1.3	.7	.7	.3	.5	.2	.2	.2	0	.7	.4
Methadone	N	9	5	5	3	3	1	2	2	2	4	2
Codeine	Percentage	1.1	.7	.6	.4	.5	.2	.4	.2	.4	.7	.3
Fluoxetine	N	9	7	8	6	6	1	1	4	3	4	3
Norgesic	Percentage	1.1	1.0	1.0	.8	1.1	.2	.2	.5	.6	.7	.4
Pan Prague	N	8	12	9	3	7	2	5	7	2	5	12
Morphine	Percentage	1.0	1.7	1.1	.4	1.3	.3	1.0	.9	.4	.9	1.6
Naas	N	9	8	5	2	5	1	2	3	1	4	3
	Percentage	1.1	1.1	.6	.3	.9	.2	.4	.4	.2	.7	.4
Total	N	798	708	814	727	547	559	485	821	471	581	769

As it is observed in the above table, cigarette and tobacco smoking in Azerbaijan, Ardebil, and Zanjan were the highest frequent among other provinces while tobacco smoking took up the highest frequency in Tehran after that in Azerbaijans, Ardebil, and Zanjan. Cannabis, ecstasy, crystal, heroin, and crack were the most frequently used drugs and opium and Ritalin use had the highest frequency in Gilan, Mazandaran, and Golestan. Statistics show that tramadol use has had the highest frequency in Azerbaijans, Ardebil, and Zanjan.

Prevalence of drug use has been presented based on residential place in the following table.

Table 8: Prevalence of drug use based on residential place

Substance	*Family*		*Dormitory*		*Student houses*		*Total*	
	N	*Percentage*	*N*	*Percentage*	*N*	*Percentage*	*N*	*Percentage*
Cigarette	295	10.7	514	13.4	63	16.2	872	12.5
Tobacco	125	17.4	674	17.6	110	28.3	1262	18.1
Alcohol	215	7.8	270	7.1	60	15.4	545	7.8
Cannabis	42	1.5	68	1.8	16	4.1	126	4.1
Ecstasy	15	.5	25	.7	8	2.1	48	.7
Ritalin	31	1.1	38	1.0	20	5.1	89	1.3
Opium	22	.8	57	1.5	10	2.6	89	1.3
Heroin	7	.3	19	.5	5	1.3	31	.4
Crack	8	.3	18	.5	5	1.3	31	.4
Crystal	16	.6	21	.5	6	1.5	43	.6
Tramadol	42	1.5	77	2.0	14	3.6	133	1.9
LSD	7	.3	22	.6	4	1.0	33	.5
Diphenoxylate	13	.5	39	1.0	4	1.0	56	.8
Diazepam	47	1.7	58	1.5	6	1.5	111	1.6
Methadone	16	.6	36	.9	6	1.5	58	.8
Codeine	249	9.1	360	9.4	38	9.8	647	9.3
Fluoxetine	17	.6	38	1.0	11	2.8	66	.9
Norgesic	7	.3	21	.5	7	1.8	35	.5
Pan Prague	7	.3	23	.6	6	1.5	36	.5
Morphine	10	.4	31	.8	9	2.3	50	.7
Naas	22	.8	40	1.0	8	2.1	70	1.0
Pethidine	10	.4	25	.7	6	1.5	41	.6
							n=7330	

* It is noteworthy that numbers and percentages in this table are different from those in the main table of prevalence of drug use since some students have not specified their living locations.

As it is seen in the above table, the consumption of the majority of substances, especially alcohol, cannabis, opium, LSD, heroin, and crystal in those students who had student houses is higher (and even multiple times higher) than that in the other two groups. In the same way, drug use was higher in the students living in dormitory than that in aboriginal students.

Prevalence of drug use based on the students' majors has been presented in the following table.

Table 9: Prevalence of drug use based on the students' majors

Discipline	Engineering		Applied sciences		Humanities		Agricultural Sciences		Other majors		Total	
	N	Percentage	N	Percentage	N	Percentage	N	Percentage	N	Percentage	N	Percentage
Cigarette	305	14.9	157	12.0	252	11.7	104	11.4	28	6.7	846	12.4
Tobacco	442	21.7	225	17.2	365	17.0	156	17.1	50	12.0	1238	18.1
Alcohol	201	9.8	81	6.2	146	6.8	73	8.0	21	5.0	522	7.6
Cannabis	47	2.3	13	1.0	41	1.9	11	1.2	5	1.2	117	1.7
Ecstasy	15	.7	3	.2	18	.8	4	.4	3	.7	43	.6
Ritalin	41	2.0	6	.5	21	1.0	8	.9	5	1.2	81	1.2
Opium	30	1.5	9	.7	30	1.4	13	1.4	4	1.0	86	1.3
Heroin	9	.4	2	.2	7	.3	4	.4	3	.7	25	.4
Crack	8	.4	1	.1	9	.4	5	.5	3	.7	26	.4
Crystal	14	.7	2	.2	14	.7	5	.5	3	.7	38	.6
Tramadol	38	1.9	22	1.7	44	2.0	18	2.0	5	1.2	127	1.9
LSD	7	.3	4	.3	10	.5	4	.4	3	.7	28	.4
Diphenoxylate	11	.5	5	.4	18	.8	8	.9	8	1.9	50	.7
Diazepam	27	1.3	20	1.5	39	1.8	13	1.4	7	1.7	106	1.6
Methadone	18	.9	4	.3	19	.9	9	1.0	3	.7	53	.8
Codeine	187	9.2	116	8.9	195	9.1	94	10.3	47	11.2	639	9.4
Fluoxetine	19	.9	11	.8	15	.7	8	.9	8	1.9	61	.9
Norgesic	۹	.4	4	.3	8	.4	6	.7	3	.7	30	.4
Pan Prague	10	.5	6	.5	9	.4	4	.4	2	.5	31	.5
Morphine	11	.5	8	.6	16	.7	7	.8	4	1.0	46	.7
Naas	26	1.3	9	.7	22	1.0	6	.7	3	.7	66	1.0
Pethidine	12	.6	5	.4	13	.6	4	.4	2	.5	36	.5
												n=7330

*It is noteworthy that numbers and percentages in this table are different from those in the main table of prevalence of drug use since some students have not specified their academic majors.

As it is indicated in the above table, the use of such substances as cigarette, tobacco, alcohol, cannabis, and Ritalin has been higher in the students of engineering majors than that in the students of other majors while this is not different in terms of such substances as opium and tramadol. In addition, the students of humanities consumed ecstasy and diazepam more than the students of other majors. Similarly, agricultural students consumed crack and codeine more than the students of other majors.

Discussion and Conclusion

The findings of this study showed that the prevalence of drug use during the lifetime of students belonged to tobacco (28.7%), cigarette (20.4%), alcohol (11.9%), opium (3.1%), cannabis (2.8%), crystal (3.1%), ecstasy (1.3%), crack (.9%), heroin (.8%), and LSD (.8%), respectively. Lifetime use of Ritalin and tramadol were reported about 2% and 4.2%, respectively. A brief look at these statistics shows that the consumption of the three substances of tobacco,

cigarette, and alcohol is highly prevalent among students. The results indicate that, with the exception of tobacco, shisha and drinks, the most commonly used substances during the lifetime of students are opium (3.1%), cannabis (2.8%), crystal (1.3%), and ecstasy (1.3%), respectively. The percentage of use of such substances as crack, heroin, and LSD were reported less than one percent. These statistics for the annual prevalence have been as follows: tobacco (17.9%), cigarette (12.4%), alcohol (7.9%), opium (1.3%), cannabis (2%), ecstasy (.7%), crystal (.6%), LSD (.5%), crack (.5%), heroin (.4%), Ritalin (1.3%), and tramadol (1.8%). In this study, consumers were divided into four categories: cigarette and tobacco smokers, alcohol consumers, users of narcotics, and drug and pill consumers. Accordingly, 31.7% of the whole students have tried smoking cigarette or tobacco in their lifetime. This findings holds true in male students two times as large as that in female students (21.3%). In total, 20.1% of the students had smoked cigarette and/or tobacco during one year. This percentage in male students (30.1%) was three times as large as that in female students (11.6%). In other words, it is true that female students have had the experience of smoking cigarette or tobacco during their lifetime, but the statistics pertinent to one-year use of the two substances which is a valid index to measure the prevalence of smoking indicate that only half of the female students who had this experience during their lifetime are smoking cigarette or tobacco at present. This amount is two-thirds in male students (30.1% out of 43.9%). Tobacco consumption and cigarette smoking in male students (23%) was three times as large as that in female students (7%) during the last month. In other words, even though the total of female students who have experienced smoking cigarette or tobacco is half of this number in the male students, the number of female students is as many as one-third of male students in this regard.

The results of this study also showed that the ratio of male students (18.6%) to female students (6.3%) is almost three to one out of the students who had used alcohol at least once in their lifetime. This proportion during the past year was observed 13.1% in male students and 3.6% in female students with the total percentage of 7.9%. Alcohol use in the last month was 1.7% and 7.8% in female and male students, respectively with the total percentage of 4.5%. The percentage of hard drug users among students was 4.8% in general, whether one or more of a substance to be consumed in their lifetime. This index in male students (7.3%) was almost three times as large as that in female students (2.5%). Totally, the use of hard drugs was 2.5% among all students. This index in male students (3.9%) was three times as large as that in female students (1.3%). The total percentage of drug users in the last month was equal to 1.5%. This index in male students (2.3%) was almost twice as large as that in female students (.9%). In terms of the consumption of pills and drugs, female and male students obtained almost equal percentage in such a way that 23.4% of the whole students reported that they had taken pills or drugs without a doctor's prescription at least once in their lifetime. This proportion in female students (23.6%) was slightly

higher than that in male students (23.3%). The total annual consumption of pills and drugs was 11.3% which was higher in female students (11.6%) than that in male students (11%). The total monthly consumption of pills and drugs was obtained equal to 7.2% which is still slightly higher in female students (7.6%) than that in male students (6.8%).

Serajzadeh & Feizi (2004) reported the percentage of cigarette smoking and alcohol drinking as 21.4% and 20% among participants, respectively. Siam (2006) found that 24.1% of the participants smoked cigarette and 10.5% of them consumed alcohol which seems the percentage of cigarette smoking is higher than that in the current study and that of alcohol consumption is higher than that in the current research. Shams Alizadeh, Moghaddam, Mohsenpoor & Rostami Gouran (2008) obtained the amount of alcohol drinking equal to 17.1% which is higher than the obtained percentage (11.9%) in the current study. In terms of cannabis the statistics obtained in all the studies are close to each other, apart from those in Shams Alizadeh, et al's (2008) research wherein the consumption of this substance was estimated 4.7%. In terms of opium, Serajzadeh & Feizi (2004) have reported 10% of lifetime consumption whereas the other studies have reported a range of 2% to 5%. In terms of the above findings, it can be stated that the three substances of tobacco, cigarette, and alcohol which are referred to as soft substances in the literature took up the highest frequency of consumption among students, respectively. This pattern has been the same as that in previous studies on the students of Universities of the Ministry of Science (Taremian et al., 2007 and Serajzadeh & Feizi, 2004). In other words, the maximum amount of consumption has belonged to tobacco, cigarette, and alcohol. Thus, it seems that preventive measures in college campuses should first start from the three aforementioned substances. While cigarette and alcohol are referred to as input substances in the research literature and scientific resources. Another point is that the use of hard drugs with high addictive degree among students is very low. For example, the highest rates of opium use during lifetime has been 10% while the lowest consumption of that has been 2.3% (Serajzadeh & Feizi, 2004). It is so while it seems that Serajzadeh and Feizi's research result in this area contains some overestimation. In terms of heroin, this amount is at least .6% and at most 2.2%. This difference can be attributed to several factors: first is the type of university, Universities of the Ministry of Health and the Ministry of Science. The second factor is related to the instruments used for data collection which are mainly questionnaire. Only the questionnaire designed by Taremian et al (2007) has been employed once in 2006 on students of Ministry of Science, once again on the students of Medical Sciences in Tehran, and in the current research. In other words, the questionnaire was structurally the same for these studies. In other research projects, one separate questionnaire has been used in each study; therefore, there was no possibility to compare the results obtained from the same instrument. In addition, the structure of the questions used to measure the prevalence of drug use and different types of questions lead

to different responses. In the studies pertinent to the epidemiology of drug use, the prevalence of drug use is measured in three parts of lifetime (Have you ever used…?), last year (Have you used… during the last year?), and last month (Have you used… during the last month?). This point has not been observed in the research done by Serajzadeh & Feizi (2004) and Siam (2006). For example, in Siam's questionnaire (2006), the questions are asked based on experience and no time duration has been defined. Another issue is related to the name of substances; for example, exhilarating substance is used in Siam's research and it is not clear that the respondents should consider which substances as exhilarating. Another important point is the purification of the data before analysis. In the field of data purification techniques, scientific books and resources emphasize that all the questions used in epidemiological studies should be purified before the final data analysis and, thereby, the removal of 5 to 10 percent of the questions is required. In Shams Alizadeh, et al's (2008) study, two questionnaires were excluded out of 1058 completed questionnaires. Obviously, the inclusion of unreliable questionnaires in the final analysis will lead to questionable results.

In addition to the comparison of the results of the current study with those of the previous studies conducted in Iran, it is relevant to compare the findings of this study with those of foreign studies. In this regard, the prevalence of drug use among Iranian students has been compared with that in American students in Table 10. A short look at the table shows that drug use pattern in Iranian and American students is different. Yearlong consumption of cannabis, alcohol, ecstasy pills, LSD, cigarette, and Ritalin in American students is 16, 10, 6, 4, 2, and 1.8 times as large as that in Iranian university students, respectively. This can be due to cultural differences in the pattern of drug use among Iranian students with American and European students. Accordingly, alcohol abuse in these countries is ranked as the first one among other substances. In addition to the data quoted by the website www.monitoringthefutures.com, it is possible to refer to the report released by the annual survey of American students (Johnston, O'Malley, Bachman, & Schulenberg, 2000), based on which the percentage of students using alcohol, cigarette, marijuana, and cocaine during one year was 82.4%, 43.6%, 31.6%, and 1.6%, respectively. According to Yukon Addiction Survey (2005), 79% of people over 15 years living in Yukon State of Canada, have drunk alcohol, 28% have smoked cigarette, 21% have used cannabis, 3% have used cocaine, 1% have used ecstasy, and 1% have used hallucinogens (cited in Rahmati, Taremian & Sohrabi, 2006). However, the use of such substances and drugs as tobacco, opium, and tramadol is prevalent among Iranian students, whereas it has not been reported for the students of American universities. It is also noteworthy that double use of heroin and 6-time use of crystal among Iranian students compared to American students provides room for reflection and concern, although the use of these two substances is very low. In addition, as it can be observed in the following table, the most frequently used drug or

substance is tobacco or cigarette among Iranian students and alcohol among American students. It seems that the religious prohibition of alcohol consumption and ambiguity in clear prohibition of tobacco and cigarette smoking have been effective in the achievement of such findings among Iranian students.

Table 10: Comparison of drug use status between Iranian students in 2012 and American students in 2011

Substance	***One-year prevalence (percentage)***		***One-month prevalence (percentage)***	
	Iran	America	Iran	America
Cigarette	12.4	25.8	9.2	15.2
Tobacco	17.9	----	11.6	---
Alcohol	7.9	77.4	4.6	63.5
Cannabis	2	33.2	1.3	19.4
Ecstasy	.7	4.2	.5	.7
Crystal	.6	.1	.4	.1
LSD	.5	2	.4	.5
Heroin	0.4	0.2	.4	.1
Opium	1.3	---	.9	----
Crack	.5	.3	.4	.1
Ritalin	1.3	2.3	.7	-----
Tramadol	1.8	---	1.1	----

The findings of the study also show that the use of all substances examined in here (tobacco, cigarette, alcohol, opium, cannabis, ecstasy pill, crystal, crack, and heroin) is significantly different in male and female students and this ratio was higher in male students than in female students. In fact, the risk of drug-related behaviors in men is higher than in women. The same higher proportion of male students in substance use has also been reported in the studies done by Taremian, Bolhari & Peyravi (2007, 2010), Shams Alizadeh et al (2008), Siam (2006), Zarabi et al (2008), Bahrainian & Ghaedi (2002), and Karbakhsh & Zandi (2007). To account for this result, Mohammadi (2005) showed that girls view substance abuse as a wrong action to a greater extent that boys do so. However, recent studies have shown that drug abuse among women has experienced a considerable increase and even no significant difference has been found in it between men and women in some studies (Warner- Smith, Darke, Lyn keg & Hall, 2001; Cook, Moocher, Michaud &Yersin, 2004). The yearlong rate of increase in consumption of the following drugs in males is almost 3 to 5.5 times higher than that in females: opium (4.5 times), tramadol (5.5 times), cigarette (almost 3.7 times), alcohol (3.6 times), heroin (3 times), and LSD (3.5 times). The consumption rate of tobacco (2.6 times) and cannabis (2.5 times) is observed from 2 to 3 times larger in males compared to that in females. However, boys were found consuming a higher proportion of crystal (2 times), ecstasy pills

(1.8 times), crack (2 times), and Ritalin (1.9 times) two times or less than females. It is noteworthy that the consumption of no substance in girls is higher than in boys in accordance with global consumption patterns.

Based on the findings of the present study, the amount of drug use among the students living in student houses (alone or with friends) is higher than that in those students living in dormitory and this is higher in the students living in dormitory than in aboriginal students or the ones living with their parents. This proportion in the majority of substances, especially cannabis, alcohol, heroin, crystal, and tramadol is higher (and even multiple times higher) in those students with student houses than that in the other two groups. Those students living with their parents are exposed to the minimum risk of substance use. The only exception is related to alcohol consumption that is more frequently found in aboriginal students than in the students living in dormitory which seems that surveillance and monitoring of wardens and the presence of non-using students can account for the fear and avoidance of alcohol in dormitory students. Similar findings have been obtained in previous studies (Taremian et al., 2010 & 1386; Shams Alizadeh et al., 2008; Siam, 2006; Serajzadeh & Feizi, 2004).

In total, three basic explanations can be suggested in this regard: first, living away from family and close relatives may be followed by adaptability problems which lead the student to drug use as a defense mechanism. The findings of several years pertinent to National Mental Health Plan Workbook of Students also confirm the finding that the students living in student houses are exposed to risk of psychological problems and disorders more than other students (Yaghoubi, Akbari Zardkhaneh & Veghar, 2008 & 2009). Second, freedom from monitoring constraints of the family can be considered as one of the risk factors associated with drug use. Monitoring and controlling the activities of children's relationships on part of parents protect children against substance abuse. Based on Taremian's findings (2004) family empowerment is the strongest factor of protection of children against abuse. Third, living in student-related environments and interacting with the peers who encourage substance use can affect adolescents and youths at risk of substance abuse (Braitwaite, Robillard, Wooding, Stephens & Arriola, 2001).

It should be noted that the figures presented in this study include the population of students at risk of drug use rather than substance abusers or drug-dependent students. It is evident that a small portion of the population are suffering from drug abuse and dependence. It should be kept in mind that the accessibility to the prevalence of drug abuse and dependence requires the design of specific questions and methodology. Moreover, the use of three indicators, namely "drug use during lifetime", "drug use during last year", and "drug use during last month" are still the best indicators for the assessment of substance use via questionnaire. However, some researchers have suggested some indicators such as "daily consumption during the last month" and "drug use in the past three months" (Rahimi Movaghar, Sahimi Izadian & Yunesian, 2006).

Although a small percentage of students are involved in the issue of drug use, prevention of drug use is of critical importance since students are the future of social capitals of the community. Due to the extensive research background on the effectiveness of teaching life skills that address many psychosocial risk factors for substance abuse and other psychosocial trauma, it is necessary that the authorities of higher education undertake effort more than ever towards the development of teaching life skills as one of the main strategies of drug use prevention through the allocation of one or two credit courses. The findings obtained from the present study suggest that male students try taking drugs more than female students; therefore, they are at greater risk of addiction. The proportion of drug use is several times higher in male students than female students, which sometimes reach 5.5 to 1. Although this situation is consistent with global patterns, again it is reminiscent of the point that specific programs for students are strongly required. The present study showed that drug use among students in the dormitory, and especially among the students living in rented houses and student houses is higher than that in aboriginal students. In addition to emphasizing the importance of familial monitoring of the behavior of the youth, this finding warns the authorities and university managers that not only should they be careful about dormitory students, but they should also do necessary planning for the students living at student houses. On the other hand, these days, the assignment of public dormitories to the private sector is more discussed. Perhaps it is desirable that the officials and senior managers of the Ministry of Education to seriously reconsider the assignment of public dormitories to the private sector. Otherwise, officials of the Department of Student Affairs, Student Welfare Fund, and university administrators should display high sensitivity to the observation of preventive, health, and psychological programs in dormitories while licensing the dormitory owners. Due to regional differences in the consumption of different drugs, it appears that the custodians of initial prevention of drug use in universities and higher education institutions should consider these differences. For example, cigarette smoking, tobacco smoking, alcohol use, and cannabis use in provinces such as East and West Azarbaijans, Ardebil, Tehran, Fars, Isfahan, and the Northern provinces are higher than in other regions respectively. Opium consumption is high in the Northern provinces, Bushehr, Hormozgan, Isfahan, Fars, Khorasan, and Tehran, respectively. Ritalin use in the Northern provinces, Fars, Isfahan, and Tehran is higher than in other provinces. At the Universities of East and West Azerbaijans, Ardabil, Northern provinces, Fars, Isfahan, Khorasan, and Tehran, Tramadol use is higher than in other universities. The comparison of pattern of drug use among students in Iran and the United States shows that yearlong consumption of cannabis, alcohol, ecstasy pills, LSD, Cigarette, and Ritalin in American students is 16 times, 10 times, 6 times, 4 times, 2 times, and 1.8 time as large as those in Iranian students, respectively. However, the use of such substances and drugs as tobacco, opium, and tramadol is prevalent among

Iranian students that has not been reported for the students of American universities. It is also noteworthy that double use of heroin and 6-time use of crystal among Iranian students compared to American students provides room for reflection and concern. From one half to two thirds of the students who reported drug use have started drug use, especially substances such as cigarette, tobacco, alcohol, opium, heroin, and crack during pre-university period. Thus, the importance of early prevention programs in schools, especially teaching life skills and creation of interaction and cooperation between the two main educational and cultural institutions of the country, i.e. Ministry of Education and Ministry of Science, Research and Technology is becoming more urgent.

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