

The Prevalence of Substance use and Associated Risk Factors Among University Students in the City of Jahrom, Southern Iran

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Background: Substance use among college students in Iran is a serious problem. Determining the pattern of substance use among University students is an important issue for implementing prevention and treatment programs.

Objectives: The present survey attempts to determine the prevalence of substance usage and associated risk factors among the students of Jahrom University of Medical Sciences and Islamic Azad University of Jahrom, Jahrom, Iran.

Patients and Methods: This cross-sectional study was carried out from December 2012 to February 2013 and included 1149 randomly selected students of two Jahrom universities. A standard questionnaire was used for data gathering. Data were analyzed using the SPSS version 15 for Windows. T-test and Chi-square and Logistic regression tests were used for data analysis.

Results: Tobacco (28.3%), alcohol (13.0%), and cannabis and marijuana (5.2%) were the most common substances used by the students. The prevalence of substance use among the male students was significantly higher (OR: 1.5, 95%CI: 1.42 - 2.68, $P < 0.001$). The risk of at least single episode of substance usage was higher among the students which were living alone (OR: 3.03, 95%CI: 1.74 - 5.28, $P < 0.001$). The most important motivators for beginning substance use were curiosity, in 46.4%, and seeking pleasure, in 28.8%.

Conclusions: Substance usage is considered as a risk factor for students' health among University students in Iran. Design of educational courses addressing the detrimental effects and dire consequences of substance usage could help to improve control programs. Universities could improve their drug abuse control programs by focusing on the high risk groups determined by relevant studies.

Keywords: Tobacco Use; Drinking, Alcohol; Substance-Related Disorders; Students

1. Background

Changes in living conditions are always associated with stress, and students who attend universities are exposed to profound changes in their lifestyles (1). For most students, college attendance is a period of excitement, which is associated with anxiety and stress (1). It seems that certain people, including students, may choose risky behaviors, such as drug abuse, for releasing psychological tension and pressure (2).

Adolescents and young adults are the main group exposed to the risk for behavioral misconduct (3). These risky behaviors have led to the increasing rate of early death, disability and chronic diseases, observed in the recent decades in developing countries, including Iran (3). Similar researches, conducted in multiple countries, underline the importance of physical and mental health of the students (3).

To date, several studies have been conducted on students concerning mental health status, the prevalence of specific psychiatric disorders, such as anxiety and depression, and how students cope and deal with campus (4).

Statistics have shown a dramatic increase in the rate of drug abuse in different communities, especially among young people in recent decades (4-9).

Also, other studies show an increase in the prevalence of high-risk behaviors among college students in Iran (10-16). The study of Taremi et al. showed a relatively high prevalence of soft drugs (water pipe smoking 34%, cigarette 24%, and alcohol 17%), and a low prevalence of hard drugs (opium 2.3%, marijuana 2.2%, and ecstasy 0.7%) among University students in Tehran (13). Water pipe smoking (hookah) is a type of smoking habit, widely encountered in Middle Eastern countries (17), in which smoke passes through water (18).

Siam, in his study among male students in different universities of Rasht, found that 46.75% of students had used cigarette or other drugs at least once in their lifetime. The frequency of consumption was as follow: cigarette 24.13%, alcohol 10.50%, ecstasy 7.25%, and opium 4.87%. Moreover, 17.90% of married and 27.07% of single students smoked cigarette (14).

The current study evaluated the prevalence of substance use among the students of Islamic Azad University of Jahrom (AUJ) and Jahrom University of Medical Sciences (JUMS) in the city of Jahrom, Southern Iran, during 2012 - 2013.

2. Objectives

The present survey attempts to determine the prevalence of substance usage and associated risk factors among the students of JUMS and AUJ.

3. Patients and Methods

A confidential standard questionnaire based on the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV), composed of a number of multiple choice questions was used throughout this cross-sectional study (19, 20). Subjects of this study were 648 students of AUJ and 501 students of JUMS, who were randomly selected from December 2012 to February 2013. Total number of students of JUMS was 1171 (males: 425, females: 746) and total number of students of AUJ was 3150 (male: 1600, female: 1550). All participants were selected by simple sampling method and randomized by table of random numbers.

The students were free to select more than one choice. Special attention was paid to ensure that all of the students clearly understood the instructions about the questionnaire. The students were also asked not to write their name or any other symbol indicating their identity and were assured about confidentiality of their responses.

The first part of the questionnaire included information on age, sex, marital status and place of residence with companion, if any, and household composition, parents' literacy status and job, field of study and year of entering the University. The second part of the questionnaire related to the type of substances used consisting of tobacco, alcohol, opium, heroin, hookah, cocaine, grass, morphine, cannabis and psychedelic drugs, such as lysergic acid (diethylamide).

The students were also asked about their age at the first consumption of substance, their reasons for using the drugs for the first time, the most important motivators of substance use, the reasons for continuing substance usage, and the frequency of substance use (single occasion, infrequent, and sustained substance usage). Students who used substance once in a month were categorized as occasional user, and those using substance more than once in a month were considered as sustained users. The questionnaire was approved by five behavioral psychologists, all of which being faculty members of different universities in Iran. Reliability of the questionnaire was examined by a pretest-posttest study ($r: 0.882$). All data collectors were students of medicine who were trained regarding the questionnaire.

3.1. Statistical Analysis

Data from this study were analyzed using the Statistical Package for the Social Sciences (SPSS), version 15 (SPSS Inc., Chicago, IL, USA). Data are reported as the mean \pm SD. T-test

and Chi-square tests were used for data analysis. Logistic regression modeling was used to determine the factors that affect substance use, as dependent variables, and sex, marital status, location, and type of universities, which were regarded as independent variables. Multiple logistic regression model was done to compute the odds ratio (OR) and 95% confidence interval (95% CI) for risk factors for substance use. A $P < 0.05$ was considered statistically significant.

4. Results

Overall, 1149 students, including 731 (63.6%) females and 418 (36.4%) males, completed the questionnaire, of whom 501 (43.6%) were from JUMS, and 648 (56.4%) from AUJ. There was no significant difference between the students of the two universities regarding the sex ratio ($P > 0.05$). Mean age of the females and males were 21.2 ± 2.6 and 21.1 ± 2.1 , respectively ($P > 0.05$). Moreover, 927 (82.0%) of the students were single and 203 (18%) were married.

In regard to the place of residence, 236 (21.4%) of the students lived with their family, 771 (69.8%) in the student dormitory and 98 (8.9%) lived alone. With respect to the history of substance usage, 322 (34.7%) of the singles and 87 (42.9%) of the married students experienced at least one episode of substance use, considering that the rate of substance use was significantly lower among the single students ($P = 0.029$).

In regard to the relationship between the substance use and the place of residence, 258 (33.5%) of the students living in the students' dormitory, 80 (33.9%) of those staying with their families, and 62 (63.3%) of the students who lived alone had a history of at least one episode of substance use. The rate of substance use among the students who lived alone was significantly higher than others ($P < 0.001$).

Table 1 indicates the number of subjects, the frequency of substance usage, and the type of substance used, based on sex and the University. As for the experience of substance usage, 733 (63.8%) of the students never used substances and 36.2% (416) experienced at least one episode of substance use, of whom 189 (45.2%) were males and 227 (31.1%) females ($P < 0.001$). The rate of substance use among the male students was significantly higher than females ($P < 0.001$) and also higher in AUJ than JUMS ($P < 0.001$). The mean age at the beginning of substance usage among the male and female students were 16.5 ± 3.6 and 17.3 ± 3.6 years, respectively, which was not statistically significant ($P > 0.05$).

With respect to the frequency of substance usage, 93 (6.1%) of the students reported using substances occasionally, or once every month. Of these, 41 (5.6%) were females and 52 (12.4%) males ($P < 0.001$), with 22 (4.4%) being JUMS students, and 71 (11.0%) from AUJ ($P < 0.001$).

Sustained usage of substance was reported by 90 (5.8%) of the students, of whom 24 (3.3%) were female and 66 (15.8%) males ($P < 0.001$). These included 14 (2.8%) from JUMS, and 76 (11.7%) from AUJ ($P < 0.001$).

The most important incentives and motivators for starting and continuing the substance usage are summarized

in Table 2. Results of this study indicated that the most important incentive for starting the substance usage among the students was curiosity 193 (46.4%). Pleasure was the most important cause of continuing the sub-

stance use in 84 (20.2%) of students in this study. Additional reasons for continuing substance usage included habitual usage due to addiction 28 (6.7%), feeling of necessity 26 (6.3%), and release of tension 53 (12.7%).

Table 1. Distribution of Substance Usage According to the Kind of the Substance Among the Students Based on Gender and Type of Universities ^{a, b}

Variables	Type of Substance		JUMS		AUJ			
			Female	Male	Female	Male		
History of at least one episode of substance usage	Tobacco	Cigarette	25 (8.2)	41 (20.8)	46 (10.8)	83 (37.6)		
		Hookah	38 (12.5)	53 (26.9)	80 (18.7)	105 (47.5)		
		Total	51 (16.8)	59 (29.9)	99 (23.2)	116 (52.5)		
	Alcohol	Opium	1 (0.3)	15 (7.6)	3 (0.7)	23 (10.4)		
		Heroine and morphine	3 (1.0)	6 (3.0)	14 (3.3)	18 (8.1)		
		Cannabis and marijuana	1 (0.3)	4 (2.0)	12 (2.8)	26 (11.8)		
		Cocaine	2 (0.7)	2 (1.0)	1 (0.2)	6 (2.7)		
		LSD	0 (0.0)	1 (0.5)	3 (0.7)	9 (4.1)		
		Others	3 (1.0)	6 (3.0)	45 (10.5)	13 (5.9)		
		Total	61 (20.1)	61 (31.0)	166 (38.9)	128 (57.9)		
Occasionally substance usage	Tobacco	Cigarette	3 (1.0)	3 (1.5)	10 (2.3)	13 (5.9)		
		Hookah	5 (1.6)	11 (5.6)	25 (5.9)	18 (8.1)		
		Total	6 (2.0)	13 (6.6)	28 (6.6)	24 (10.9)		
	Alcohol	Opium	1 (0.3)	3 (1.5)	5 (1.2)	17 (7.7)		
		Heroine and morphine	0 (0.0)	0 (0.0)	0 (0.0)	6 (2.7)		
		Cannabis and marijuana	1 (0.3)	0 (0.0)	1 (0.2)	3 (1.4)		
		Others	0 (0.0)	0 (0.0)	7 (1.6)	1 (0.5)		
		Total	7 (2.3)	15 (7.6)	34 (8.0)	37 (16.7)		
		Sustained substance usage	Tobacco	Cigarette	2 (0.7)	8 (4.1)	8 (1.9)	29 (13.1)
				Hookah	1 (0.3)	4 (2.0)	11 (2.6)	31 (14.0)
Total	2 (0.7)			11 (5.6)	15 (3.5)	48 (21.7)		
Alcohol	Opium		1 (0.3)	1 (0.5)	9 (2.1)	22 (10.0)		
	Heroine and morphine		1 (0.3)	1 (0.5)	0 (0.0)	7 (3.2)		
	Cannabis and marijuana		0 (0.0)	0 (0.0)	2 (0.5)	1 (0.5)		
	Others		0 (0.0)	0 (0.0)	0 (0.0)	4 (1.8)		
	Total		3 (1.0)	11 (5.6)	21 (4.9)	55 (24.9)		

^a Abbreviations: AUJ, Islamic Azad University of Jahrom; JUMS, Jahrom University of Medical Sciences; and LSD, Lysergic acid diethylamide.

^b Data are presented as No. (%).

Table 2. Distribution of Motivator for Beginning Substance Usage and Reasons for Sustained Substance use, Based on Gender and Type of Universities ^{a, b}

Motivators	JUMS		AUJ	
	Female	Male	Female	Male
Beginning motivator ^c				
Copying friends	9 (14.8)	13 (21.3)	13 (7.8)	17 (13.3)
Curiosity	41 (67.2)	28 (45.9)	71 (42.8)	53 (41.4)
Seeking pleasure	11 (18.0)	32 (49.2)	29 (17.5)	50 (39.1)
Release of tension	5 (8.2)	21 (34.4)	12 (7.2)	34 (25.0)
Release of depression	2 (3.3)	14 (23.0)	11 (6.6)	25 (19.5)
Others	21 (34.4)	14 (23.0)	19 (11.4)	14 (10.9)
Motivators of continuing the substance use ^d				
Habitual usage	0 (0.0)	5 (8.2)	6 (3.6)	17 (13.3)
Feeling of Necessity	2 (3.3)	6 (9.8)	10 (6.0)	8 (6.3)
Seeking pleasure	3 (4.9)	11 (18.0)	30 (18.1)	40 (31.3)
Release of tension	1 (1.6)	16 (26.2)	9 (5.4)	27 (21.1)
Release of depression	0 (0.0)	6 (9.8)	7 (4.2)	18 (14.1)
Others	4 (6.6)	2 (3.3)	6 (3.6)	7 (.55)

^a Abbreviations: AUJ, Azad University of Jahrom; JUMS, Jahrom University of Medical Sciences.

^b Data are presented as No. (%).

^c Students reporting more than one motivator.

^d Students reporting more than one motivators of sustained substance use.

Table 3. The Odds Ratio and 95% Confidence Interval for Risk Factors for Substance use^a

Frequency of Usage	OR (95% CI)	P Value
History of at least one episode of substance usage		
Sex		
Male	1.5 (1.42 - 2.68)	< 0.001
Female	1	
Type of universities		
AUJ	3.07 (2.22 - 4.25)	< 0.001
JUMS	1	0.079
Marital status		
Single	1.39 (0.96 - 2.01)	0.068
Married	1	
Residency of family		
Urban	1.48 (0.97 - 2.25)	0.068
Rural	1	
Students' place of residence		
Student's dormitory	2.03 (1.36 - 3.02)	< 0.001
Living alone	3.03 (1.74 - 5.28)	< 0.001
Living with their families	1	
Occasionally substance usage		
Sex		
Male	2.85 (1.63 - 5.00)	< 0.001
Female	1	
Type of universities		
AUJ	3.08 (1.67 - 5.69)	< 0.001
JUMS	1	
Marital status		
Single	0.62 (0.30 - 1.31)	0.213
Married	1	
Residence place of family		
Urban	1.18 (0.60 - 2.32)	0.637
Rural	1	
Students' place of residence		
Student's dormitory	2.03 (0.99 - 4.18)	0.053
Living alone	2.59 (1.19 - 5.65)	0.017
Living with their families	1	
Sustained substance usage		
Sex		
Male	4.62 (2.46 - 8.67)	< 0.001
Female	1	
Type of universities		
AUJ	3.74 (1.78 - 7.84)	< 0.001
JUMS	1	
Marital status		
Single	1.17 (0.59 - 2.33)	0.657
Married	1	
Residence place of family		
Urban	1.27 (0.63 - 2.58)	0.505
Rural	1	
Students' place of residence		
Student's dormitory	1.29 (0.61 - 2.74)	0.503
Living alone	3.45 (1.70 - 7.00)	< 0.001
Living with their families	1	

^a Abbreviations: AUJ, Azad University of Jahrom; JUMS, Jahrom University of Medical Sciences; OR, odds ratio; 95% CI, 95% confidence interval.

Table 3 shows the result of multiple logistic regression, based on factors thought to impact substance use. Most important risk factors associated with frequencies of substance use among the students included male gender

($P < 0.001$) and the type of the university, exemplified by higher frequency of substance use in AUJ ($P < 0.001$).

The risk of at least one episode of substance usage was higher among students living in students' dormitory

(OR: 2.03, 95% CI: 1.36 - 3.02, $P < 0.001$) or lived alone (OR: 3.03, 95% CI: 1.74 - 5.28, $P < 0.001$), rather than those living with their parents. The risks of occasional substance usage (OR: 2.59, 95% CI: 1.19 - 5.65, $P = 0.017$) and continuous substance use (OR: 3.45, 95% CI: 1.70 - 7.00, $P < 0.001$) were higher among the students living alone, compared to those living in other types of students' accommodations.

5. Discussion

The findings of this research are consistent with other national studies and indicated that usage of all types of substances among the university students of Jahrom City in Iran is generally lower than in western countries (21-23). In this regards, 36.2% of students of Jahrom universities experienced at least one episode of substance usage. This is in line with the findings of Goreishi et al. (21), among the students of Zanjan universities (40.3%), and also with the study of Jodati et al. (24), in Tabriz universities (32%).

Findings of this study indicated that the most common substances used by the students were tobacco, alcohol, and opium. A similar study, conducted on the students of Shiraz University of Medical Sciences, Shiraz, Iran, showed that tobacco and alcohol were the most frequently used substances (20), a finding comparable to the study of Goreishi et al. in Zanjan (21).

Many studies reveal that the pattern of substance usage among the students of western universities is different from its pattern in Iran, so that alcohol and various opiate are the most common substances used by western college students (20, 25, 26), while in Iran, hookah and cigarette are at the topmost substances used by the students. Availability of substances and different prohibitive laws could be considered as the determinant factors of this discrepancy (21). Although there exist several regulations that prohibit usage of tobacco at the university campuses in Iran, however, the law enforcement and monitoring programs are faced with short of efficient implementation (13).

Many strict prohibitive regulations, enacted against the usage of alcohol and opium, along with the religious beliefs, reduced the rate of consumption of these substances in Iran, compared to several other countries (20). Nevertheless, increasing usage of alcohol and opium by university students in Iran is of serious concern and deserves appropriate measures to be taken by the decision makers (24).

Considering different rates of consumption, the risk of substance use among the male students was significantly higher than females. This is in accordance with the findings of a similar study on students of Zanjan universities, which showed the risk and incidence of substance use were significantly higher in males (6.3%) than in females (1.2%) (21). Another study carried out at Shiraz University of Medical Sciences, Shiraz, Iran, evaluated 532 university students regarding substance use, which was higher among males (4.2%) than females (0.2%) (27). Numerous studies across the world have revealed differences

in drug abuse between males and females, which were consistent with our findings (28, 29). This is evidenced by the differences in availability of substances to males and females, a condition accounting for increasing access of male students to substance use (3). Also, multiple factors, such as social stigma, have important effects on the decisions of female students to use substances (28, 30, 31). The dependence of female students on their families could also be one of the reasons for lower substance use among females than male students (21).

According to the results of our study, the type of university was another important risk factor for substance use among the university students. By and large, the incidence and risk of substance use among the students of AUJ was significantly higher than in JUMS students, at all levels of substance use frequencies.

The JUMS, as a public university, and AUJ, as a private institution, enroll students from different socioeconomic groups, so that those who attend the private university are generally from wealthier families. It seems that the difference in substance usage between students of these universities relates to affording the cost of substances by the students of the private university (14), as well as the different lifestyles of students from different socioeconomic groups, which affect their behavior, such as their tendency to substance use (28).

The results of our study show that the place of residence of students is another important risk factor that impacts substance use. Living alone and living in students' dormitory were additional risk factors for substance use among the students with the history of at least one episode of substance usage and in those with occasional substance usage. Among the students with sustained substance usage, living alone was a risk factor for such behavior.

The study of Sahraian et al. (20), in Shiraz, indicated that 22% of the students who lived in the student dormitory, 4% of the students who lived with their families and 57% of the students who lived alone had a history of at least a single episode of substance use, so that the rate of substance use among those who lived with their family was significantly lower than in the other students. Several studies suggest the positive effect of living with family on prevention of substance use among the college students in Iran (20). Implementation of strict supervision programs, along with attending effective psychological consultation courses by students living in dormitories, could help reduce the prevalence of substance use (13).

The curiosity and seeking pleasure are the most important impetuses for starting substance use. Students with continuous substance usage mentioned that seeking pleasure and releasing tension were the most important incentives for sustained usage of substance. In the study performed in Zanjan universities, the most important motivators for substance use were pain relief in 32.7%, seeking pleasure in 13.3%, and curiosity in 9.3% (21). Another study conducted in Shiraz University of Medical

Sciences, Shiraz, Iran, revealed that curiosity (59.7%), seeking pleasure (19.2%), and copying friends (9.6%) were the three most common motivators of substance usage (20), a finding which was consistent with our study.

Lack of sufficient and proper knowledge about the side effects of substance use misleads people to use drugs and substances for pleasure and control of tensions (3). Appropriate information through educational courses and counseling practices has a positive effect on awareness of people about the realities associated with usage of substances (32).

Substance usage is considered as a risk factor for students' health in Iran. Tobacco, alcohol, cannabis and marijuana were the most common substances used by the students of Jahrom universities. Being male and living alone are two important risk factors for substance usage. The curiosity and seeking pleasure were the most important motivators of substance use.

Universities could improve their drug abuse control programs by focusing on the high risk groups, which are identified by relevant studies. It is suggested that several educational and consultation courses could improve knowledge and attitude of students about the detrimental effects and dire consequences of substance usage. It is also suggested that implementing strict surveillance on the behavior of students in dormitories and residential places of students, along with direct cooperation of students' families, are important in reducing, if not in complete eradication of substance use. Finally, it is worth enacting as number of powerful laws to prohibit substance usage by university students.

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