

## Epidemiology of Substance Use among Dentistry Students (Shiraz-Iran)

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**Objective:** Substance use among university students is a mental health concern. The aim of the current study was to assess prevalence and motivations for substance use in a sample of dentistry students at Shiraz University of Medical Sciences in Iran.

**Methods:** This cross-sectional study was conducted on all (236) dentistry students. Data was collected using a confidential multiple-choice questionnaire detecting the current and past history, and motivations for use of various substances. In order to detect the frequency of substance use, Chi-square and Fisher's exact tests were used.

**Results:** A significant proportion of participants (41.5 %) including 18.6% of females and 54.7% of males reported use of a substance at least once in their life. Moreover, 9.3% of subjects reported regular use of at least one substance over the precedent month. In our sample, tobacco was the most common substance used by students, followed by opium, and cannabis. Pleasure seeking was reported as the most common motivational factor for substance use by dentistry students.

**Conclusion:** Substance use was significantly common in dentistry students, which suggests that it should be considered in mental health programs for university students, in particular those studying in health related fields such as dentistry.

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### Introduction

Substance use among university students is a mental health concern. Entering university coincides with separation from family and brings students more opportunities to be exposed to illicit substances. In a longitudinal prospective study, Arria *et al*, found that exposure opportunity and initiation of substance use mostly occur in college time (1). In an epidemiological study, authors noticed that a significant proportion of college students were heavy drinkers. Use of alcohol in this population was even higher than their non-college peer group (2).

Health-care students such as dentistry students are at risk of substance use due to

their familiarity and easy access to drugs. On the other hand, substance use by health-care students, via the adverse role model, could be a risk factor in increasing unhealthy behaviors in public. In a study on medical students, Kumar *et al*, found that from 32.5% to as high as 81.2% of medical students reported history of substance use (3). In a study evaluating substance use among health care students, 10% of nursing students met criteria for substance dependence, and for many, initiation of substance use had occurred in nursing school (4). Several studies have investigated substance use among college students in Iran (5-10). In spite of legal and religious prohibition for substance use in Iran, some studies revealed that a considerable proportion of college students used a substance occasionally. In an epidemiological study, Sadeghi *et al* noticed that nearly half of medical interns had used various substances during their college time (5).

To the best of our knowledge, there are few studies investigating the substance use

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prevalence in dentistry students. We have, therefore, conducted this study with the aim of assessing the prevalence and motivational factors associated with substance use in a sample of dentistry students.

## Materials and Methods

This study was conducted on all dentistry students at Shiraz University of Medical Sciences. Students were divided in six groups based on their study year. A trained research assistant explained the purpose of the study to students, and participants were reassured that the questionnaire would be anonymous and confidential. In addition, to socio-demographic questionnaire, a multiple-choice questionnaire was used to detect the prevalence and pattern of substance (11). Substances studied in the research were tobacco, opium, cannabis, LSD, cocaine, heroin, and morphine. Three more questions were added to identify the motivations for substance use among our sample. We considered two patterns for substance use: occasional and regular. Current use was defined as regular use in the last 30 days. Data analysis was carried out using SPSS version 11.5. To detect the frequency of substance use we performed chi-square and Fisher's exact tests.

## Results

Two hundred and thirty-six students with a mean age of  $23.03 \pm 4.31$  (response rate 78.7 %) completed and returned the questionnaires. Eighty six (36.44 %) students were female and 150 (63.56 %) were male. Ninety eight students (41.5%) reported history of substance use at least once during their life. Twenty two subjects (9.3 %) reported regular pattern of substance use.

Table 1 provides result of frequency analyses for substance use at least once during students' lifetime. As showed in table 1, the most common substance used by the students was tobacco (33.3 %) followed by opium (11.9 %), cannabis (3.8 %), heroin (0.8 %), and LSD (0.4 %). None of the subjects used cocaine or morphine.

Table 1. Number of subjects who reported usage of a substance at least once or more in their life\*

Substance		n (%)	P-value
Nicotine	† F	11 (12.8)	0.000
	‡ M	68 (45.5)	
	§T	79 (33.3)	
Opium	F	2 (2.3)	0.000
	M	26 (17.3)	
	T	28 (11.9)	
Heroin	F	-	0.402
	M	2 (1.3)	
	T	2 (0.8)	
LSD	F	-	0.635
	M	1 (0.7)	
	T	1 (0.4)	
Cocaine	F	-	
	M	-	
	T	-	
Cannabis	F	2 (2.3)	0.3
	M	7 (4.7)	
	T	9 (3.8)	
Morphine	F	-	
	M	-	
	T	-	
Total	F	16 (18.6)	
	M	82 (54.7)	
	T	98 (41.5)	

\* Respondents were allowed to report use of more than one substance

† F = Female ‡ M = Male § T = Total

As showed in table 2, 8.1% of subjects used tobacco regularly. From non-tobacco substances, opium, cannabis, and heroin were the commonest substances used by regular users. The most frequent motivational factors for substance use among students who reported usage of a substance at least once in their life were pleasure seeking behavior, modeling (imitation) and self medicating to relieve symptoms of anxiety and depression, respectively. No sex difference was observed with respect to motivation. The motivational factors for substance use in regular users, in order of frequencies, were pleasure-seeking, addiction, a need to avoid withdrawal symptoms, relieving the symptoms of anxiety and modeling.

Table 2. Number of subjects who reported an ongoing (current) usage of a substance

Substance		n (%)	P- value
Nicotine	† F	1 (1.2)	0.003
	‡ M	18 (12)	
	§ T	19 (8.1)	
Opium	F	1 (1.2)	0.537
	M	3 (2)	
	T	4 (1.7)	
Heroin	F	-	0.635
	M	1 (0.7)	
	T	1 (0.4)	
LSD	F	-	
	M	-	
	T	-	
Cocaine	F	-	
	M	-	
	T	-	
Cannabis	F	1 (1.2)	0.364
	M	-	
	T	1 (0.4)	
Morphine	F	-	
	M	-	
	T	-	
Total	F	2 (2.3)	
	M	20 (13.3)	
	T	22 (9.3)	

\* Respondents were allowed to report use of more than one substance

† F = Female ‡ M = Male § T = Total

## Discussion

Little is known about substance use among health care students, in particular in the field of dentistry. In a cross-sectional study surveying the pattern of substance use among students of a University in Iran (Khorasan province), it was detected that 15.7% of students had used at least one substance over the past year (7). In a study on a sample of 473 health care students, Ahmadi et al noticed that, 34.7% of the participants reported substance use either in an occasional or regular pattern (9).

The main finding of this study was that, 41.5% of the participants reported use of a substance at least once in their life. In a study on Iranian college students, Merchant *et al*, found that 24% of students had used at least a substance several times during their lifetime (8).

The striking result in our study was that 9.3% of students used a substance regularly.

Tobacco was the most common form of substance used by our sample (33.3%) followed by opium (11.9%). Similarly, tobacco was the substance most frequently used by (8.1%) followed by opium (1.7%) by those students who used substances occasionally. These findings are in line with the results of previous studies recruiting health-care students. In Ahmadi *et al*'s study on a sample of health-care students, it was detected that, cigarette, opium, and cannabis were the most prevalent substances use by students regularly (9). Meanwhile, earlier studies revealed that cannabis was the most non-tobacco substance used by university students. Twenty four percent of Iranian College students had consumed cannabis as the most frequently used substance other than tobacco in Merchant *et al*, study (8). In addition, there was no report of cocaine use in our sample. In contrast, in the present study, opium was the most commonly used non-tobacco substance among the students. Although it is difficult to explain this difference with certainty, the cohort effect could be considered to provide an explanation. The study by Merchant *et al* was conducted three decades ago and there have been great socioeconomic changes in Iran since then. Moreover, various types of substances have become available over the past few decades. The above findings suggest that, availability of illegal substances could be the most significant factor determining the prevalence and the mode of substance use by people. For example it has been shown that, while tobacco use is the most prevalent form of substance use among Iranian university students, alcohol is the most commonly used substance among students of western countries (12). It is however reassuring to see that, in our study regular use of non-tobacco substances is relatively low. On the other hand, the addictive nature of agents such as opium and heroin should not be underestimated. Health care workers who are using these substances regularly are at a greater risk of acting unprofessionally and therefore can, as a wrong role model, influence the behavior of the younger generation in the society.

In the present study, 13.3% of males and 2.3% of females were regular substance users.

This difference was statistically significant but inconsistent with the results of previous studies that, found lifelong substance use was not significantly different between both sexes (13).

In conclusion our study revealed that 41.5% of dentistry students at Shiraz University of Medical Sciences reported use of at least one substance, sometime during their life, and 9.3% of the participants were still using substances regularly. Tobacco was the most commonly used substance, followed by opium, and cannabis. Substance use was significantly higher in males than females. Pleasure seeking behavior was found to be the major motivational factor both for the past and the current users.

### ***Limitation of the study***

Because substance use can result in social, legal, and academic problems, it might have been difficult for some students to return the questionnaire. Another limitation of the study was lack of any question on use of alcohol and synthetic hallucinogens in our questionnaire.

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