Substance Use among Students of Guilan University of Medical Sciences in Iran in 2005-2006

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Abstract- Population pattern in Guilan province represents a dramatic increase in youth population. Regarding high prevalence of substance use among them, its destructive effects and consequences and paucity of previous related studies, this research was performed to determine the prevalence of substance use among students of Guilan University of Medical Sciences (GUMS). We conducted a cross-sectional study in a representative sample of 845 students in 2005-2006. Data were collected by a questionnaire including demographic data and history of substance use and were analyzed by EPI 2002 software and chi-square. 30.1% of students had a history of substance use at least once during their lives. Cigarette (26.36%), alcohol (17.04%) and opium (3.86%) were the most prevalent used substances. Substance use was significantly associated with male gender, higher age groups, living with friends or alone and being married. There were significant relationships between substance use during past 30 days and studying medicine or dentistry and substance use during life and past 30 days was significantly higher in residency period. This study demonstrated substance use between our samples was considerable and specific interventions to reduce it seem necessary.
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Key words: Substance-related disorders; prevalence; students

Introduction

Epidemiologic studies have postulated that illicit substance use in youth population is more prevalent than other age groups in the society (1). and it has major consequences like educational problems, legal conflicts and increased mortality rate because of accidents during driving or work with electrical machines in industries, suicide, homicide and unintentional injuries (2).

Research has shown that substance use and its patterns in university students have changed dramatically in the past decades. A study in Croatian medical students suggested that substance use had increased from 14% in 1989 to 35% in 2000 (3). Ecstasy use in American university students rose by 69% from 1997 to 1999 (4). In Iran, despite of the preventative governmental policies, substance use has increased in youth population especially among university students (5).

In a research on medical students of Shiraz University of Medical Sciences, the prevalence of substance use at least once during the life was 57.7% .Cigarette was used by 52% of students and the prevalence of Alcohol,

Opium and Cannabis were 25%, 21% and 12% respectively (6). Another study in Shiraz in 2000 demonstrated that the prevalence of each substance during life was: cigarette (54.9%), alcohol (34.7%), opium (21.2%) and cannabis (12.6%). Furthermore, the number of current users of each substance was cigarette (36%), alcohol (21.4%), opium (6.2%) and cannabis (2.4%) (7).

Review of literatures suggests that male gender is significantly associated with substance use. Sargolzayi showed that substance use was more prevalent between male medical students of Mashhad University of Medical Sciences comparing to females (8). The same finding was obtained by Chodorowski in 2001 (9). Najafi et al concluded that a significantly higher proportion of male students uses illegal drugs in Rasht high schools (10).

Alcohol and marijuana are the most common drugs in Western countries; by contrast, cigarette is the most prevalent substance in Iran (5). In addition, the trend of substances which are commonly used has been changed during past decades. In Canada, Cannabis, hallucinogens, Methamphetamine, crack and Heroin consumption have not increased dramatically between 1988 and 1998

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and cocaine consumption has fallen from 4.8% in 1988 to 1.7% in 1998 (2) and ecstasy use raised from 2.8% in 1997 to 4.7% in 1999 (4).

With respect to the high proportion of young population in Iran, increasing prevalence of substance use between them and its destructive consequences and the rarity of previous studies in this field, an understanding of the prevalence and risk factors of substance use among students was necessary.

Patients and Methods

We carried out a descriptive and cross-sectional study in 845 students of Guilan University of Medical Sciences during 2004-2005. Samples were selected by simple sampling. An anonymous, self-report questionnaire was applied to collect demographic data (sex, age, subject of study, educational grade, place of residence and marital status as well as information related to substance use (history of substance use during life and previous 30 days and the kind of substance).

The questionnaire was designed by principal investigators and was reviewed and confirmed by several psychiatrics and psychologists. The internal validity and reliability of the questionnaire was confirmed in the same previous studies carried out by Ahmadi et al among university students and Najafi et al between Guilan high-school students (7) .

Regarding age, our subjects were divided into 5 age groups which were as follows: 17-20, 21-24, 25-28, 29-32 and 33-40 years old.

Subject of study was grouped in two different categories: medicine or dentistry, other subjects.

Subjects were asked to specify their place of residence by choosing one of the choices: University Hall, with family and with friends or alone.

We assessed the use of tobacco, opium, heroin, cannabis, ecstasy and alcohol. Any use of these substances was sufficient for our subjects to be classified as substance user. We asked out subjects whether they ever had the history of substance use (possible answers: yes, no).

First a list of faculties of GUMS and students in each faculty was obtained. Subjects were chosen using simple sampling and the questionnaires were distributed between them by our researchers most commonly in the faculties and hospital wards. To be more precise, our researchers accessed to medical and dental students in pre-clinical period in their faculties and students in clinical and residency periods were accessed in their hospitals. All of the students whose names were included in the

aforementioned list of faculties' students were asked to participate in the study. All of the questionnaires were anonymous, samples were made sure that their information would remain private and only consenting students took part in the survey. In the next step, samples filled out the questionnaires by themselves. Eventually, collected date were analyzed by EPI2002 software and qui-square test.

All the statistic tests and questionnaires are available from the authors upon request.

Results

18 subjects due to incomplete responses were excluded from our study While 827 subjects were included. The age of our samples ranged from 17 to 40 and the mean age was 22.12± 3.79. Table 1 shows the main demographic characteristics of the population under study.

30.1% of students reported to have substance use at least once during their lives and 11.4% had recent substance use during past 30 days.

Relative frequency of substance use in the life was 59.3% in males and 13.9% in females while it was 25.1% in males and 3.8% in females during past 30 days. There was significant relationship between male gender and substance use even once in the life (*P*=0.000) as well as during past 30 days *(P=0.000)*.

Relative frequency of substance use during life and previous 30 days according to the type of substance is demonstrated in table 2.

Table 3 shows the prevalence of substance use during life and past 30 days stratified by different age groups. Substance use during life and past 30 days was of the highest prevalence in 33-40 yrs age group and a significant relationship was shown between substance use both during life and recent 30 days with older age groups. (P=*0.000 & P=0.009* respectively)

33% of medical and dental students and 27.1% of other students had the history of substance use during their lives while the prevalence of substance use during past 30 days was 13.9% in medical and dental students and 8.8% in other students. Substance use during life was not correlated with educational subject *(P=0.077)*; however substance use during past 30 days was significantly higher in medical and dental students. *(P=0.028)*.

Table 4 demonstrates the relationship between substance use during life and previous 30 days with the educational grades. We conducted that studying in residency period was related to substance use during life in Medical and dental students *(p=0.019)* but it was not significant in past 30 days *(P=0.228)*.

Furthermore, there was not any association between substance use during life and past 30 days with different educational grades in other students. *(P=0.296 & P= 0.203)*.

Prevalence of substance use during life and previous 30 days were 32.5% and 12.3% in students who were living in residence hall, 21.6% and 7.6% in living with family, 48.1% and 19.5% in living with friends or alone and 14.3% & 14.3% in living in other situations. The relationship of substance use during life and recent 30 days and living with friends or alone was of statistical significance in our study *(P= 0.000 & P*=0.023).

45% of married students and 28.1% of single students had history of substance use during their lives and relative prevalence of substance use in the past 30 days was 15% in married and 10.7% in single students. A significantly higher proportion of married population had substance use during life and past 30 days (*P*=0.001 *and P*=0.033, respectively).

Table 1. Distribution of samples by selected socio-demographic variables

	Variables	Number	%
Age	Female	532	64.3
	Male	295	35.7
	17-20 yrs	314	38
	21-24 yrs	380	45.9
	25-28 yrs	83	10
	29-32 yrs	17	2.1
	33-40 yrs	33	4
Subjects	Medicine or dentistry	418	50.5
	Others	409	49.5
Place of residence	University hall	465	56.2
	With family	278	33.6
	With friends or alone	77	9.3
	Others	7	0.9
Marital status	Married	80	9.67
	Single	739	89.4
	Other	8	1

Table 2. Relative frequency of substance use by the type of substance

Substnce use / Type of substance	in life-time(even once)		during last 30 days	
	number	percent	number	percent
Alcohol	141	17.04	33	3.9
Cigarette	218	26.36	80	9.6
Opium	32	3.86	11	1.3
Heroin	9	1.08	3	0.36
Cannabis	23	2.78	3	0.36
Morphine	5	0.6	3	0.36
Ecstasy	17	2.05	6	0.72
Cocaine	7	0.84	2	0.24
Crystal	7	0.84	3	0.36
Others	5	0.6	2	0.24
Each substance or cigarette	249	30.1	94	11.4

Table 3. Relationship between substance use and age groups

Age	In life-time(even once)		During last 30 days	
Substance use	Number	Percent	Number	Percent
17-20 yrs	60	19.1	22	7
21-24 yrs	137	36.1	50	13.2
25-28 yrs	31	37.3	15	18.1
29-32 yrs	7	41.2	4	23.5
33-40 yrs	14	42.4	3	9.1

Table 4. Relationship between substance use and educational subjects

Educational subject	Substance use	In life-time (even once)		During last 30 days	
		Number	Percent	Number	Percent
Medicine	Pre-clinical	45	24.1	20	10.7
Or	Clinical	76	39.6	31	16.1
Dentistry	Residency	17	43.6	7	17.9
	Grade 1-2	71	28.3	26	10.4
Others	Grade 3-4	40	26.5	10	6.6
	Grade 5-6	0	0	0	0

Discussion

Our findings concluded that male gender, higher age groups, living with friends or alone and being married were significantly related to substance use at least once during life and substance use in the past 30 days. A significant association was found between educational subject and substance use during life and past 30 days. Moreover, there was a significant relationship between relative frequency of substance use during life and educational grade in medical and dental students while this relationship was not considerable in substance use in the previous 30 days.

Relative frequency of the substance use at least once in the life was: cigarette (26.36%), Alcohol (17.04%), opium (3.86%), cannabis (2.78%), ecstasy (2.05%), heroin (1.08%), cocaine & crystal (crystal which is used in Iran is a combination of heroin and amphetamine) (0.84) and morphine & other substances (0.6%). According to these results, cigarette was the most common substance and alcohol and opium were in the second and third places. It is consistent with other studies in Iran. Sargolzayi showed that cigarette and alcohol were the most frequent drugs between medical students in Mashahad (8). and Ahmadi et al demonstrated cigarette, alcohol, opium and cannabis were of the highest prevalence in the students of Shiraz University (7). Our results are considerably close to the same research in Guilan University in 2005-2006 which the relative frequency of substance use was cigarette (31.8%), alcohol (18%), opium (3.2%), ecstasy (2.6%) and cannabis (2.5%) (11). The results of literatures in Iran confirm that cigarette is still the most common substance in our country while alcohol has remained as the most frequent substance in Western countries' university students (5). Bearing in mind that the pattern of substance use in each society is affected by people's culture and beliefs and this fact that alcohol consumption is forbidden in our religion, finding alcohol as the second prevalent substance in Iranian university students (before opium) was unexpected. We concluded that the replacement of alcohol instead of other substances during period of abstinence as well as sedative and mood elevating effects of it resulted in its high prevalence.

Relative frequency of substance use during past 30 days was almost in concordance with prevalence of substance use in the life and it was as follows: cigarette (9.6%), alcohol (3.9%), opium (1.3%), ecstasy (0.72%), heroin & cannabis & morphine & crystal (0.36%) and cocaine and other substances (0.24%). Ahmadi et al. achieved the same findings in Shiraz University (7). In our study ecstasy use was higher than cannabis during previous 30 days. Possibly, it shows that the pattern of substance use is changing in our university students due

to more availability, more convenient consumption and stronger effects of ecstasy.

The prevalence of substance use in the life and past 30 days was significantly higher in male students than female students. Other studies confirm the same findings in Iran (5,8). Chodorowski showed illicit substance use was significantly higher in male students than females (9). In the most of the societies men have more freedom in the terms of familial and social relationships and they work in the society more than women. Thus, they have more access to drugs. On the other hand, in our society, women's relationships are more controlled by their family members than men which results in fewer opportunities for illicit drug use.

Substance use in life and recent 30 days was related with age group and seemed significantly higher in older students. It was more prevalent in age group 32-40 yrs. Sargolzayi showed the same relationship (8). The lowest prevalence was related to age groups 32-50 and 17-20. Literatures have proved that in general population, substance use decreases in older ages (1). and it is consistent with our findings representing a decrease in substance use during past 30 days in higher age groups.

Prevalence of substance use in the life and during past 30 days was higher in medical and dental students than other students and this relationship was significant in the term of substance use during past 30 days; however Trkulja concluded that substance use was less common in medical students comparing to other students (3). Studying a more difficult subject, dealing with more stressful situation and more competitions between medical and dental students will lead to more pressure on these students and consequently the higher prevalence of substance use among them.

In medical and dental residents substance use was more prevalent and it was significantly related with substance use during life. No relationship between substance use and educational grade was found in a same study in Iran (8). Trkulja found that substance use is more between senior university students (3). More stress between medical and dental residents because of heavier responsibilities and studying in a more difficult period can describe higher substance use in them.

Students who were living with friends or alone were more prone to substance use and this relationship was statistically significant. By contrast other research did not confirm this finding (8,11). Nevertheless, lack of supportive role and intensive control of family will result in uncontrolled and inappropriate social relationships and more access to illicit drugs.

Substance use both during life and past 30 days was significantly higher in married students. The pressure of family responsibility along with the stress of studying and undesired economical situation in most of the married students can be possible explanations; however referring to the same research in Iran this relationship was not approved (8).

In conclusion substance use during life and past 30 days were more frequent in male students, higher age groups, living with friends or alone and being married. Studying medicine and dentistry was related to substance use during previous 30 days and medical and dental residents had higher substance use during life comparing to others.

With respect to these findings, supportive systems in the society have to take male and older students into special consideration. In addition, families can play a crucial role in preventing substance use among students by their intensive control and social support. In addition, Preventive and educational programs in the universities can be effective in limiting substance use in the students.

Regarding the relationship of various psychological factors such as stress, depression and different types of personalities with substance use, we suggest that this association be assessed in a distinct study using psychological measurements in order to achieve a better understanding of this problem between university students.

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