

## Patterns and Correlates of Substance Use Among University Students in Iran

Ali Talaei, MD \* , Naghmeh Mokhber, MD \* , Mohammad Reza Fayyazi Bordbar, MD \*  
Arash Javanbakht, MD \* , Ali Akbar Samari, PhD \*\*

**Objective:** Substance use, especially among young generation, is a public health concern. The aim of the current study was to explore the interrelation between certain variables including demographic characteristics and family history of drug abuse and history of depression among Iranian University students.

**Methods:** In a cross-sectional study, 843 college students of the Azad University of Torbat Jaam (Khorasan province) completed a questionnaire containing data on demographic characteristics, lifelong and past month history of substance use, family history of substance use and different types of substance used by students. Participants also completed the Beck Depression Inventory.

**Results:** 57.5% of those who took part in the study were male. 30.7% of the participants revealed a lifetime history of substance use (209 males and 55 females). Use of alcohol, cigarette, cannabis, and opium was significantly higher among men. 14.9% of participants had used substances in the past month and 15.1% in the last year. Cigarette was the most commonly used substance (19.2%). The second and third most commonly used substances were opium (15.4%) and alcohol (10.8%). Beck Depression Inventory score was significantly higher among students with a history of substance use ( $p=0.000$ ).

**Conclusion:** Substance use was commonly reported by the university students. This was significantly associated with a diagnosis of depression.

*Iranian Journal of Psychiatry and Behavioral Sciences (IJPBS), Volume 2, Number 2, Autumn and Winter 2008: 15-22 .*

**Keywords:** Depression • Family • Iran • Substance

### Introduction

Use of alcohol, tobacco and illicit drugs are major public health issues in several countries, mainly among youngsters. Various cross-sectional epidemiological studies have been designed to assess the prevalence of drug use among college students. Since in those studies, different methodologies were applied, a comparison of the data obtained by them is of little reliability. Nevertheless, epidemiological study of substance use among the youth can be extremely important regarding to service delivery (1).

In general, most of the studies are in agreement as to the higher rate of drug use among college students than in the general population (2-4). Separation from the family and introduction to a new environment and

peer pressure are some reasons for the higher rate of substance use among college students (5). Peer pressure and an acquisition of independence may create an increased potential for such behaviors (6). Eisenberg and Wechsler found that the social environment is influential on the use of substances among the students of the American colleges (7). In addition, poor behavior control proved to have direct effect on deviant peer affiliations. Also, poor emotional control was in direct relation to motives for substance use and dysfunction in both types of self-regulation proved to be relevant to the amount of students' substance use (8). Furthermore, it was found that youth with disabilities use cigarettes or hashish or engaged in binge drinking more than others (9).

Some evidence suggest that immigrant youths may be at greater risk of substance use than nonimmigrant ones (10) and alcohol and drug use among adolescents living in affluent social settings has been found to be related to poorer psychosocial adjustment (1). A study in Thailand showed that there was a significant

**Authors' affiliations :** \* Department of Psychiatry, Mashhad University of Medical Sciences, Mashhad, Iran \*\* Educational member of Azad University, Kashmar, Iran.

**Corresponding author :** Ali Talaei MD, Assistant Professor of Psychiatry, Department of Psychiatry, Ibn-e-Sina Psychiatric Hospital, Bu-Ali Sq, Amel Blv, Mashhad, Iran, PC: 9195983134  
Tel : +98 511 7112722  
Fax : +98 511 7112723  
E-mail: [TalaeiA@mums.ac.ir](mailto:TalaeiA@mums.ac.ir)

correlation between current illicit substance use, age, gender, vocational situation, school level and school performance (11). Significant relation was observed between binge drinking and substance use (12).

Spirituality may play a significant role in the decision of college students to use or not to use substances (13). It has also been shown that certain types of athletic activity may reduce the risk of substance use by college students (14).

The use of alcohol, tobacco and of illicit drugs may also influence students' college performance (4) and can lead to involvement in other unexpected behaviors (15) such as HIV- related sexual behaviors (16, 17) and behaviors which increase the risk of road traffic accidents (18). A study in Lebanon revealed that the rate of lifetime alcohol use had increased from 1991 to 1999; this increment was higher in younger people and in females (19). Although they found out that Christians drank more alcohol, once users, university students (regardless of their religion) had the same rates of alcohol use and dependence.

A study on substance use among Iranian students of the University of Tabriz showed that older age, risk taking behaviors, high amount of tobacco use, self-injurious behavior, higher socioeconomic class and previous use of illicit drugs were factors associated with future use of alcohol (20). However, it revealed a low prevalence of illicit drug use among students. Other studies in Iran have reported that cigarettes, alcohol and opium are the most prevalent substances used by students (21).

The aim of our study was to explore the relationship of gender, age, family history of substance abuse and drug use with depression among university students of the Azad University of Torbat Jaam (Iran). We also studied the association of risky behaviors with drug use among them.

## Materials and Methods

We invited all students of the Azad University of Torbat Jaam to take part in the study by completing an anonymous questionnaire. The questionnaire contained items about age, sex, marital status, field of study, employment status, lifelong and past month history of substance use and family history of substance use. If they had history of substance use, they were additionally asked to comment on the name of the substance they used, the reasons for taking it, number of attempts to quit and the reasons for quitting. They were also asked to elaborate on why they thought they could not quit substance use successfully. Participants were also asked to complete the Beck Depression Inventory (BDI). Data were analyzed by descriptive statistical tests, independent t-test and one-way ANOVA.

At this point the authors would like to inform the readers that alcohol is not legally available in the market in Iran and its consumption is forbidden by Islamic laws. Because more than 98% of Iranians are Muslim, alcohol use, even socially and in small amount, is not socially, religiously or culturally an acceptable behavior in Iran.

## Results

### Demographic data:

Out of 843 students who completed the questionnaires, 485 (57.5%) were male. Most of the participants were between the ages of 18 to 24 (77.8 %). Only (3.6%) were older than 35.

Three hundred eighteen (37.7%) students were studying psychology. The field of family study had the least number of students (0.9%). Five hundred fifty eight (66.2%) students were unmarried and 53.4% did not have a job. Demographic data are shown in table 1.

**Table 1.** Demographic data of Torbat-e-Jam Azad University students

Variables	Sex		Age groups (Year)			Marital status		Employment status		Field of study†					
	Male	female	18-25	26-34	+35	Single	Married	+	-	P	C	PE	Ag	Ac	FS
N	485	358	656	157	30	558	285	393	450	318	183	160	88	86	8
Percent	57.5%	42.5%	77.8%	18.6%	3.6%	66.2%	33.8%	46.6%	53.4%	37.7	21.7	19	10.4	10.2	0.9

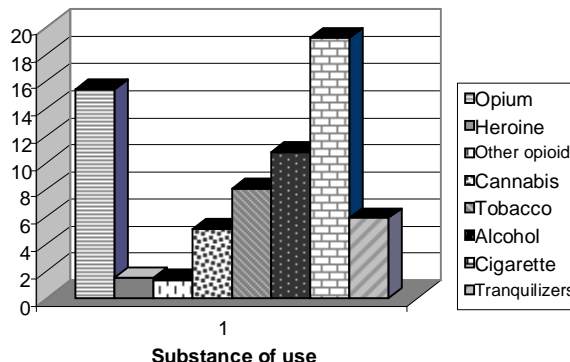
†P: Psychology, C: Communication, PE: Primary Education, Ag: Agriculture, Ac: Accounting, FS: Family Studies.

**Substance use data:**

While 584 students (69.3%) claimed that they had never used any substances, 259 (30.7%) students reported that they had a lifetime history of substance use (204 males and 55 females). Use of Alcohol, cigarette, cannabis, and opium was significantly higher among men than women (Table 2).

About fifteen percent of participants (126 students) had used substances in the past month and 15.1% (127 students) had the history of substance use in the last year before taking part in the study. Cigarette was the most widely used substance: 19.2% of participants had a previous history of smoking. The second and third most commonly used substances were opium (15.4%) and alcohol (10.8%). The least commonly used substances were heroine (1.5%) and other opioids (1.3%). Among opium users, most students reported that they smoked opium (11%), while 4.4% said that they used it orally. Data about the type of used substances are summarized in Figure 1.

Overall, 173 students reported the use of substances in their family members. The highest rate of substance use was seen among fathers of the students (n: 108) followed by brothers (n: 69). Only 10 students reported substance use by their sisters. For students who had a positive family history of substance use, the most commonly used substance was opium followed by tobacco, alcohol, tranquilizers, hashish, heroin, and other opioids (Table 3).

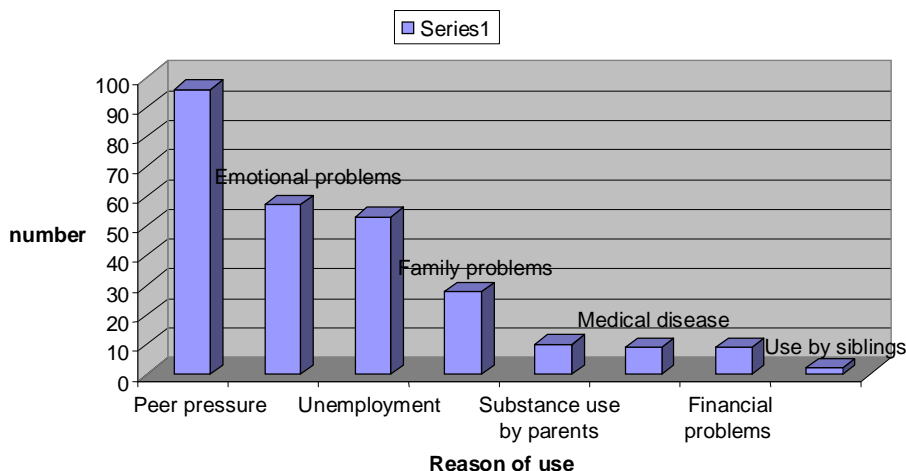


**Figure 1.** Diagram 1 various substances used by the students

Students reported peers pressure, emotional problems and unemployment as the main reasons for using substances. The least frequently reported reason for substance use was substance use among parents and siblings followed by suffering from a medical illness and financial problems (Figure 2).

**Association studies:**

Majority of substance users were male and single and most of them belonged to the age group of 18 to 24 (78.8%) (Table 4). Small numbers of students were above the age of 35 (2.7%). This was consistent with the age distribution of all students who participated in the study.



**Figure 1.** Perceived reasons for substance use by students

**Table 2.** Association of sex with substance use

Substance	Cigarette	Opium	Tobacco	Alcohol	Sedatives	Hashish	Heroin	Opioids
Male users	138	86	46	84	33	39	8	8
Female users	24	7	22	7	17	4	5	3
P Value	0.000	0.000	0.096	0.000	0.240	0.000	0.501	0.371

**Table 3.** Rate of substance use among the family members of all students

Substance	Cigarette	Opium	Tobacco	Alcohol	Sedatives	Hashish	Heroin	Opioids
Number	121	53	39	33	32	13	9	7
Percent	69.9%	30.6%	22.5%	19.1%	18.5%	7.5%	5.2%	4%

**Table 4.** Rate of substance use based on demographic data and in the month and the year before the study and family history of substance use among students

Sex		Marital status		Job		substance use in the month preceding the study		substance use in the year before the study		Family history of substance use	
Male	Female	Single	Married	No	Yes	Yes	No	Yes	No	Yes	No
78.8%	21.2%	64.9%	35.1%	49%	51%	48.6%	51.4%	49%	51%	34.7%	65.3%

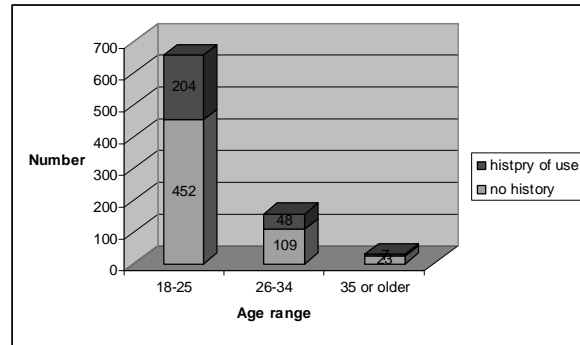
**Table 5.** Different types of substance use among family members of students who used substances

Substance	Cigarette	Opium	Tobacco	Alcohol	Sedatives	Hashish	Heroin	Opioids
Percent	22.4%	11.2%	9.3%	8.5%	6.9%	3.9%	3.5%	1.9%

About forty nine percent had used substances in the past month and 49% in the past year prior to taking part in the study. 34.7% of the substance users had a positive family history of substance use with the highest rate by their fathers (21.1%) followed by brothers (15.8%), spouses (5.8%) and sisters (3.9%) (Table 5). Among the family members of substance users, the most highly used substances were cigarette (22.4%), opium (11.2%), and tobacco (9.3%) (Table 5).

Men had significantly higher rates of previous or current substance use (n: 204) compared with women (n: 55). This difference was statistically significant (p=0.000). There was no significant difference in the rates of substance use among students of different age groups (Figure 3). And although there was slightly higher rate of use among married students than unmarried (32% and 30% respectively), this difference was not statistically significant (p=0.636).

The highest rate of substance use in different fields of study was among students of agriculture (55%) followed by psychology (32%), communication science (30%), accounting (27%), and primary education (21%). Students of family studies did not report any use of substances (0%) (p=0.000).



**Figure 3.** Different age groups among students with substance use history

Unemployed students had significantly lower rate of a history of substance use than employed students (28% and 33% respectively) (p=0.000).

**BDI scores:**

The average BDI score for all the participants was 14.5 with the median of 13.0 and mode of 12.0 (Standard deviation: 9.875). Mean BDI score was 14.2 for males and 14.9 for females; however, this difference was not statistically significant (p=0.303). BDI score was also found to be significantly higher

among the unmarried students ( $p=0.009$ ). There was no significant difference in BDI score between different age group ( $p=0.80$ ).

BDI score was higher among students with a history of substance use (16.4) compared to students with no previous use (13.7) ( $p=0.000$ ). There was no relation between BDI scores of students with substance use and their age range ( $p=0.209$ ) or the field of study ( $P=0.083$ ). However, BDI score was significantly higher in substance users who were unemployed compared to those who were employed ( $p=0.05$ ).

In those who did not report any substance use, we could not find any differences in BDI scores of different age groups ( $p=0.61$ ). For these students, there was also no association between the BDI score and employment status. However, among these students, mean BDI was higher in single students (14.27) than the married ones (12.54) ( $p=0.029$ ).

Although BDI was higher in women with a history of substance use than men (18.59 and 15.87 respectively), this difference was not statistically significant ( $p=0.135$ ). However, our study did not reveal a statistically significant difference between the score of BDI of the married and unmarried women ( $p=0.078$ ).

## Discussion

In our study, 30.7% of the students reported a lifetime history of at least using one substance (78.8%: males and 21.2%: females). This is similar to the finding of previous studies which reported substance use to be significantly higher among men than women (5, 22-26). However, this difference is more obvious for alcohol use (27, 28).

The result of our study is in accord with other studies, except one (29), in showing substance use to be commoner among younger age group (30, 31) and unmarried students (3, 25). It is important to note that lifetime drug use is associated with high risk sexual behaviors which are more common in young unmarried males (7, 15, 16, 32, 33). Marriage might provide emotional support and protect people from drug use. Some studies highlighted the

role of family in reducing the rate of drug use (19, 27, 34, 35).

Our study revealed that cigarette was the most widely used substance among the students. In our study, 19.2% of participants stated that they smoked cigarette in the past. The second and third most highly used substances were opium (15.4%) and alcohol (10.8%). Other studies have revealed such a similar pattern (12, 36-38). Abiodun et al. (39), however, found that the most commonly used substances among their sample population were salicylate analgesics (56.2%), antibiotics (23.6%), stimulants (21.6%), alcohol (12.0%) and cigarette (4.4%).

Other people examined the association between tobacco use and use of other substances (40, 41). Ahmadi et al. reported that cigarettes, alcohol and opium were the most frequently used substances reported by their subjects (22). Research on alcohol use among university students in Lebanon and other Arab countries show that the rates of lifetime alcohol use has increased from 1991 to 1999. This increase was more dominant among younger cohorts and in females. These studies showed that University students, irrespective of their religion, had the same rates of alcohol use and dependence (19). Although we did not study the association of religiosity with substance use, it has been reported that this has an important effect on alcohol consumption (13, 27, 34, 35, 42, 43).

Our study revealed that 173 students reported the use of substances among their family members; the highest rate was among their fathers (n: 108) followed by brothers (n:69). The most commonly used substance by family members (apart from cigarette) was opium. Singh *et al.* highlighted that the use of alcohol by students is positively correlated with its use by their fathers (42). This result was replicated by other researchers (3, 43, 44).

In our study peers pressure was stated by students as the main reason they used substances. Other reasons volunteered by the students were emotional problems, unemployment and relationship problems within family network. However, previous studies showed that pleasure seeking, habitual use and tension release were the most



common reasons noted for substance use (22, 23).

Studies also show that misuse of alcohol and other substances is usually associated with serious psychosocial problems (4, 5, 30, 45, 46). There are several factors influencing the frequency of drug use. These include disinhibition, drug use by friends, susceptibility to peer pressure and encouragement by friends, positive attitudes towards drug use and easy access to drugs (43, 47, 48). Peer pressure is an important reason for drug use and it might be related to poor behavioral control that has a direct effect on deviant peer affiliations (8).

### Conclusion

Studies on substance misuse among younger generation will provide insight on individual, social as well as environmental risk factors and help policy makers to have a better understanding of this complex phenomenon. This, hopefully in long run, will promote a healthy atmosphere for debate and create a non-blaming culture in which addressing psychosocial disadvantages of this vulnerable group of clients will take priority over undue criticism.

### References

1. McMahon TJ, Luthar SS. Patterns and correlates of substance use among affluent, suburban high school students. *J Clin Child Adolesc Psychol* 2006; 35(1): 72-89.
2. Sharma RR. Knowledge of psychoactive substance use disorders among college students. *Nurs J India* 2001; 92(2): 29-30.
3. Kenna GA, Wood MD. Substance use by pharmacy and nursing practitioners and students in a northeastern state. *Am J Health Syst Pharm* 2004; 61(9): 921-30.
4. Prendergast ML. Substance use and abuse among college students: a review of recent literature. *J Am Coll Health* 1994; 43(3): 99-113.
5. Akvardar Y, Demiral Y, Ergor G, Ergor A. Substance use among medical students and physicians in a medical school in Turkey. *Soc Psychiatry Psychiatr Epidemiol* 2004; 39(6): 502-6.
6. So DW, Wong FY. Alcohol, drugs, and substance use among Asian-American college students. *J Psychoactive Drugs* 2006; 38(1): 35-42.
7. Eisenberg ME, Wechsler H. Social influences on substance-use behaviors of gay, lesbian, and bisexual college students: findings from a national study. *Soc Sci Med* 2003; 57(10): 1913-23.
8. Wills TA, Walker C, Mendoza D, Ainette MG. Behavioral and emotional self-control: Relations to substance use in samples of middle and high school students. *Psychol Addict Behav* 2006; 20(3): 265-78.
9. Hollar D, Moore D. Relationship of substance use by students with disabilities to long-term educational, employment, and social outcomes. *Subst Use Misuse* 2004; 39(6): 931-62.
10. Cooper SP, Weller NF, Fox EE, Cooper SR. Comparative description of migrant farm workers versus other students attending rural south Texas schools: substance use, work, and injuries. *J Rural Health* 2005; 21(4): 361-6.
11. Assanangkornchai S, Pattanasattayawong U, Samangsri N, Mukthong A. Substance use among high-school students in southern Thailand: Trends over 3 years (2002-2004). *Drug Alcohol Depend* 2007; 86(2-3): 167-74.
12. Jones SE, Oeltmann J, Wilson TW, Brener ND, Hill CV. Binge drinking among undergraduate college students in the United States: implications for other substance use. *J Am Coll Health* 2001; 50(1): 33-8.
13. Stewart C. The influence of spirituality on substance use of college students. *J Drug Educ* 2001; 31(4): 343-51.
14. Rockafellow BD, Saules KK. Substance use by college students: The role of intrinsic versus extrinsic motivation for athletic involvement. *Psychol Addict Behav* 2006; 20(3): 279-87.
15. So DW, Wong FY, DeLeon JM. Sex, HIV risks, and substance use among Asian American college students. *AIDS Educ*

- Prev 2005; 17(5): 457-68.
16. Bon SR, Hittner JB, Lawandales JP. Normative perceptions in relation to substance use and HIV-risky sexual behaviors of college students. *J Psychol* 2001; 135(2): 165-78.
  17. Lowry R, Holtzman D, Truman BI, Kann L, Collins JL, Kolbe LJ. Substance use and HIV-related sexual behaviors among US high school students: are they related? *Am J Public Health* 1994; 84(7):1116-20.
  18. Everett SA, Lowry R, Cohen LR, Dellinger AM. Unsafe motor vehicle practices among substance-using college students. *Accid Anal Prev* 1999; 31(6): 667-73.
  19. Karam EG, Maalouf WE, Ghandour LA. Alcohol use among university students in Lebanon: prevalence, trends and covariates. The IDRAC University Substance Use Monitoring Study (1991 and 1999). *Drug Alcohol Depend* 2004; 76(3): 273-86.
  20. Mohammad PA, Vahidi R, Fakhari A, Rostami F, Dastghiri S. Substance abuse in Iranian high school students. *Addict Behav* 2006; 32(3): 622-7.
  21. Ahmadi J, Benrazavi L, Ghanizadeh A. Substance abuse among contemporary Iranian medical students and medical patients. *J Nerv Ment Dis* 2001; 189(12): 860-1.
  22. Ahmadi J, Hasani M. Prevalence of substance use among Iranian high school students. *Addict Behav* 2003; 28(2):375-9.
  23. Ahmadi J, Maharlooy N, Alishahi M. Substance abuse: prevalence in a sample of nursing students. *J Clin Nurs* 2004; 13(1): 60-4.
  24. Odek-Ogunde M, Pande-Leak D. Prevalence of substance use among students in a Kenyan University: a preliminary report. *East Afr Med J* 1999; 76(6): 301-6.
  25. Baptista T, Novoa D, Hernandez R. Substance use among Venezuelan medical and pharmacy students. *Drug Alcohol Depend* 1994; 34(2): 121-7.
  26. Courtois R, El Hage W, Moussiessi T, Mullet E. Prevalence of alcohol, drug use and psychoactive substance consumption in samples of French and Congolese high school students. *Trop Doct* 2004; 34(1): 15-7.
  27. Fatoye FO. Psychosocial correlates of substance use amongst secondary school students in south western Nigeria. *East Afr Med J* 2003; 80(3): 154-8.
  28. Gerra G, Angioni L, Zaimovic A, Moi G, Bussandri M, Bertacca S, et al. Substance use among high-school students: relationships with temperament, personality traits, and parental care perception. *Subst Use Misuse* 2004; 39(2): 345-67.
  29. Durm MW, Bates JP. Substance abuse and academic and career problems for three age groups of college students. *Psychol Rep* 1999; 85(3 Pt 2): 1177-8.
  30. Akvardar Y, Demiral Y, Ergor G, Ergor A, Bilici M, Akil OO. Substance use in a sample of Turkish medical students. *Drug Alcohol Depend* 2003; 72(2): 117-21.
  31. Fatoye FO, Morakinyo O. Substance use amongst secondary school students in rural and urban communities in south western Nigeria. *East Afr Med J* 2002; 79(6): 299-305.
  32. Eisenberg M, Wechsler H. Substance use behaviors among college students with same-sex and opposite-sex experience: results from a national study. *Addict Behav* 2003; 28(5): 899-913.
  33. Poulin C, Graham L. The association between substance use, unplanned sexual intercourse and other sexual behaviours among adolescent students. *Addiction* 2001; 96(4): 607-21.
  34. Peltzer K, Malaka DW, Phaswana N. Sociodemographic factors, religiosity, academic performance, and substance use among first-year university students in South Africa. *Psychol Rep* 2002; 91(1): 105-13.
  35. Grunbaum JA, Tortolero S, Weller N, Gingiss P. Cultural, social, and intrapersonal factors associated with substance use among alternative high school students. *Addict Behav* 2000; 25(1): 145-51.
  36. Eneh AU, Stanley PC. Pattern of substance use among secondary school

- students in Rivers State. *Niger J Med* 2004; 13(1): 36-9.
37. Matsushita S, Suzuki K, Higuchi S, Takeda A, Takagi S, Hayashida M. Alcohol and substance use among Japanese high school students. *Alcohol Clin Exp Res* 1996; 20(2): 379-83.
  38. Abdullah AS, Fielding R, Hedley AJ. Patterns of cigarette smoking, alcohol use and other substance use among Chinese university students in Hong Kong. *Am J Addict* 2002; 11(3): 235-46.
  39. Abiodun OA, Adelekan ML, Ogunremi OO, Oni GA, Obayan AO. Pattern of substance use amongst secondary school students in Ilorin, northern Nigeria. *West Afr J Med* 1994; 13(2): 91-7.
  40. Everett SA, Giovino GA, Warren CW, Crossett L, Kann L. Other substance use among high school students who use tobacco. *J Adolesc Health* 1998; 23(5): 289-96.
  41. Gray NL. The relationship of cigarette smoking and other substance use among college students. *J Drug Educ* 1993; 23(1): 117-24.
  42. Singh H, Maharaj HD, Shipp M. Pattern of substance abuse among secondary school students in Trinidad and Tobago. *Public Health* 1991; 105(6): 435-41.
  43. Singh H, Mustapha N. Some factors associated with substance abuse among secondary school students in Trinidad and Tobago. *J Drug Educ* 1994; 24(1): 83-93.
  44. Kumar P, Basu D. Substance abuse by medical students and doctors. *J Indian Med Assoc* 2000; 98(8): 447-52.
  45. Herzog DB, Borus JF, Hamburg P, Ott IL, Concus A. Substance use, eating behaviors, and social impairment of medical students. *J Med Educ* 1987; 62(8): 651-7.
  46. Kelder SH, Murray NG, Orpinas P, Prokhorov A, McReynolds L, Zhang Q, et al. Depression and substance use in minority middle-school students. *Am J Public Health* 2001; 91(5): 761-6.
  47. Wong CS, Tang CS, Schwarzer R. Psychosocial correlates of substance use: comparing high school students with incarcerated offenders in Hong Kong. *J Drug Educ* 1997; 27(2): 147-72.
  48. Richardson JL, Dwyer K, McGuigan K, Hansen WB, Dent C, Johnson CA, et al. Substance use among eighth-grade students who take care of themselves after school. *Pediatrics* 1989; 84(3): 556-66.