Correlates of Substance Use Among Regularly Drinking University Students in Turkey

İnci Özgür İlhan[1], Fatma Yıldırım[2], Hatice Demirbaş[1], Yıldırım B. Doğan[1]

[1]Alcohol and Substance Abuse Treatment Unit, Ankara University Faculty of Medicine, Turkey
[2]Department of Labour Economics and Industrial Relations, Ankara University Faculty of Political Sciences, Turkey

Corresponding author: Dr. İnci Özgür İlhan, Ankara Üniversitesi Tıp Fakültesi Psikiyatri Kliniği, 06100 Dikimevi, Ankara, Turkey; E-mail: iilhan@medicine.ankara.edu.tr

Abstract

Background: Alcohol use in adolescence is considered to be a risk factor for later development of substance use problems. In this study it was aimed to investigate sociodemographic factors related with substance use among alcohol using university students from five university centres in Turkey. Methods: Using an anonymous self-administered questionnaire 586 students recruited from a random student sample (n=1720) who were regularly drinking (at least once a month) were surveyed. Results: Among the regular alcohol users 12.2% used cannabis at least once during life-time. Ecstasy (3.7%), solvent (1.2%), cocaine (0.6%), and heroin use (0.4%) followed cannabis use. In the multivariate analysis, staying in a dormitory seemed to be protective in terms of substance use. The risk of substance use was 2.6 times higher in males compared with the female students, and low family income increased the risk of substance use almost 4 times compared with higher income group among regular drinkers. Place of residence of the family seemed to play a mediator role in this relationship. Conclusions: Preventive efforts in substance use should consider the economical as well as social circumstances which can lead to substance use of young people (German J Psychiatry 2008; 11: 34-39).

Keywords: Alcohol use, substance use, prevalence, university students, sociodemographic factors, income

Introduction

University students constitute one of the risk groups in terms of illicit substance use. First of all, university students are in adolescent age group where identity development is a major concern and where the youth is open to peer influence. Substance use may be a type of activity with peers as an important part of one's identity development process (Palen and Coatsworth 2007). University students experience increased independence and decreased parental guidance and support which may also contribute to increased substance use. The changing life situation after entering the university is characterized by events such as leaving home, less supervision by the parents, more social contact with peers in the university campus. Thus, the youth may need to prove himself/herself as an independent "adult". They seem to have more liberal attitudes towards substance use without considering long-term negative consequences of this behaviour.

The mentioned factors that influence substance use variability are considered universal for the adolescent age group, so it is also valid for the Turkish youth. In Turkey, students enter the university by passing a central exam after high school, and it is usually the first time that youths leave their protective parent home environment. Many of the students either rent a house with their friends or they stay in student dormitories during their university years. However, this does not mean that the youth gets free from parental supervision. Before taking on the responsibility of a marriage and/or a job, close relationships of the youth with his/her family which seem to be a protective factor (De Micheli and Formigoni 2004, DiPietro et al. 2007) normally persist in Turkish culture. Besides, the parents usually continue to give

Table 1. Sociodemographic characteristics of the student sample

	N	%
Gender		
Male	345	58.9
Female	241	41.1
Place of living in the last 10-year period	492	84.0
Urban	76	13.0
Rural	11	1.9
Foreign country	7	1.1
Not stated		
Academic year		
Year 1	74	12.6
Year 2	122	20.8
Year 3	142	24.2
Year 4	214	36.5
Not stated	34	5.8
Academic performance		
Poor	62	10.6
Average	328	56.0
Good	169	28.8
Very good	25	4.3
Not stated	2	0.3
Residence		
At home with family	241	41.1
At home with friends	193	32.9
At home alone	44	7.5
In student dormitory	84	14.3
Other	23	3.9
Not stated	1	0.2
Education of the father		
Illiterate	2	0.3
Primary school	137	23.4
High school	162	27.6
College/university	241	41.1
Not stated	44	7.5
Education of the mother		
Illiterate	7	1.2
Primary school	209	35.7
High school	174	29.7
College/university	157	26.8
Not stated	39	6.7
Family income		
Poor/Average	280	47.8
Good/Very good	304	51.9
Not stated	2	0.3
Total	586	100.0

economical support to their son/daughter before entering a job.

Alcohol use in adolescence is considered to be one of the major risk factors for later development of substance use problems. Adolescents are unlikely to experiment with illicit substances without prior use of alcohol (Pederson and Skrondal 1999, Zapert et al. 2002, Barrett et al. 2006). Particularly early regular drinking and heavy drinking seem to be associated with later alcohol dependence and use, abuse or dependence on drugs (Swadi 1999, Grant et al. 2005). Alcohol use is not legally restricted and it is socially tolerated in many countries including Turkey in contrast to the other addictive substances. Alcohol is more available compared with the illicit substances. However, not every drinker becomes a substance user. Thus, there should be some additional risk factors that determine use of substances among regular drinkers. These factors need to be specified regarding the sociocultural context, so that appropriate prevention and intervention programmes can be developed. The main question of this study was what kind of sociodemographic factors influence the concurrent use of illicit substances with regular drinking among the university students in Turkey.

Material and Methods

This study is a survey carried out among randomly selected 2000 students in five universities. Students were drawn from the faculties of political sciences. Questionnaires were distributed to the participants by lecturers while they were in attendance of a required course. The lecturers were instructed about introduction of the questionnaire forms. Students were assured that their responses would be confidential, and they were informed that they were not obliged to complete the questionnaire. The respondents were instructed to place the completed questionnaire forms in an envelope before returning.

The questionnaire was prepared by the authors as a self-rating form. It consisted of questions including sociodemographic status, academic status, parents' education, economic status, and place of residence of the family. Assessment of the pattern of alcohol use was done by asking questions on ever use of alcohol, use of alcohol in the past year and frequency of drinking. The questionnaire form also included questions on ever use and frequency of use of cannabis, solvents, ecstasy, heroin, and cocaine.

A total of 1720 participants, or 86% of the sample accepted to participate in the study. Regular alcohol use was defined as having consumed alcohol at least once a month during the past year. Regular alcohol users constituted 34.1% of the sample (n=586). They were further divided into two groups according to their statement on ever use of an illicit substance (cannabis, ecstasy, solvents, cocaine or heroin). These two groups were then compared according to their sociodemographic characteristics including gender, school, academic year, subjective evaluation of academic performance, place of residence of the family over the last ten years, accommodation of the student, educational status of the parents, and family income.

The mean age of the sample was 21.5±1.8. Distribution of the sample by gender and school is shown in the Table 1.

Statistical analysis

Chi square analyses were carried out on the relationships between demographic and background variables and ever use of any of the substances among regular drinkers (users of alcohol at least once a month in the past year), and those who reported that they had been drinking with a frequency of less than once a month were excluded from the analyses. Relationships between substance use and gender, school,

Table 2. Substance use prevalence rates among regular alcohol users

Substance	Experimented only once		Continued use	
	n	%	n	%
Cannabis	45	7.7	27	4.6
Ecstasy	13	2.2	9	1.5
Solvents	5	.9	2	.3
Cocaine	2	.3	2	.3
Heroin	1	.2	1	.2

academic year, subjective evaluation of academic performance, place of residence of the family during the last ten years, place of accommodation of the student, education of the father and the mother, subjective evaluation of the family income were tested. Mean ages of first use of alcohol and cannabis were compared between the two groups using the Student t test.

Next, the relationship between sociodemographic factors and substance use was reassessed using logistic regression models. Ever use of substance was taken as the dependent variable in the logistic regression analysis. The level of significance was set at $p<0.05$.

All statistical analyses were executed by using SPSS 13.0.

Results

Of the regular drinkers, 37.9% (n=22) reported that they consumed alcohol around once a fortnight, and 29.2% (n=171) reported that they used alcohol once a week or more frequently. Among the regular alcohol users (n=586) 12.3% reported that they had ever tried cannabis. Ecstasy (3.7%), solvent (1.2%), cocaine (0.6%), and heroin use (0.4%) followed cannabis use. The frequency of substance use was also asked to the subjects. Substance use prevalence rates among regular drinkers are demonstrated in the Table 2. Nineteen of the 31 cannabis users (61.3%) reported that they had been using cannabis at most once in two months, 6 of them (19.4%) stated that their frequency of cannabis use was at least once a month, and 6 (19.4%) did not answer the

Table 3. The social context in which the substance use was first experienced

	Cannabis		Substances other than cannabis	
Place of first use	n	%	n	%
Home	31	44.9	17	51.5
School	0	0	1	3.0
Bar	6	8.7	5	15.2
Street	6	8.7	3	9.1
Other	9	13.0	3	9.1
Not stated	17	24.6	4	12.1

relevant question. Four (80%) of the ecstasy users consumed ecstasy at most once in two months, and only one in 5 users (20%) stated that their frequency of his ecstasy use was once a month. The frequency of using solvents, heroin and cocaine remained unanswered by the users.

The mean age of first use of alcohol was significantly lower (14.5±3.2, minimum 5, maximum 20) in the substance using group compared with the group without substance use (15.4±2.5, minimum 5, maximum 22) (t=2.627, p=.009). The mean age of onset of cannabis use was 18.7±2.3, minimum 15, maximum 25. This means that the students usually begin to drink before entering the university, whereas cannabis use begins during the university life, as students enter the university after 17 years of age in Turkey.

It was found that most of the substance users among regular alcohol users had experimented with using the substance at home (for cannabis 44.9%, for the other substances 51.5%), and with friends (for cannabis 72.5%, for the other substances 66.7%) (Table 3).

A greater percentage of the male students used substance (17.4%) compared with the females (7.5%). Low academic performance, as subjectively stated by the student, was related with a greater probability of substance use among regular drinkers (Table 4).

The relationships between substance use, and first age of drinking and sociodemographic factors were additionally tested by constructing logistic regression models using backward stepwise method. Male gender was again related with a higher risk of substance use, and a constant relationship was found between low family income and substance use with regular drinking both in the univariate and the multivariate analyses (Table 5). In contrast to the univariate analysis, academic performance and place of place of residence of the family were not found to be related with substance use in the multivariate analysis.

Discussion

Although the geographical location of Turkey forms a bridge between the West and the East in the drug traffic, substance use by university students in Turkey has not reached the levels reported in Europe and in the United States. In the present study prevalence of ever use of cannabis was found to be 5.9% (in 1720 students). This figure is below the lifetime prevalence rates found in many European adolescent school populations in the 15-16-year age group (over 50% in the Czech Republic, and around 14% in many other European member states) (EMCDDA 2006). Prevalence of lifetime use of marijuana among the youth is around 40-50% in the United States among random samples of high school seniors and college students (D'Amico et al. 2005, McCabe et al. 2007). Looking at the lower prevalence rates of substance use among students in Turkey compared with many other countries, it can be suggested that some cultural factors such as close family bonds of the youth with his/her family and strictly intolerant attitude of the family toward

Table 4. Relationship between substance use and sociodemographic factors among regular alcohol users, uni-variate analysis

	Life-time use of any substance[a] (n=586)			
	n	%	x^2	p
Gender				
Male	60	17.4		
Female	18	7.5	12.106	.001
Place of residence of the family (last 10 years)				
Urban	58	11.8		
Rural	16	21.1		
Foreign country	3	27.3	6.799	.033
Academic year				
Year 1	8	10.8		
Year 2	20	16.4		
Year 3	17	12.0		
Year 4	23	10.7	2.536	ns
Subjective evaluation of academic performance				
Poor	17	27.4		
Average	43	13.1		
Good	13	7.7		
Very good	4	16.0	15.604	.001
Residence				
At home with family	32	13.3		
At home with friends	28	14.5		
At home alone	8	18.2		
In student dormitory	5	6.0		
Other	5	21.7	6.493	ns
Education of the father				
Illiterate	0	0		
Primary school	15	10.9		
High school	24	14.8		
College/university	31	12.9	1.288	ns
Education of the mother				
Illiterate	2	28.6		
Primary school	26	12.9		
High school	23	13.2		
College/university	18	11.5	1.841	ns
Subjective evaluation of family income				
Poor/average	53	18.9		
Good/very good	24	7.9	15.502	<.001

substance use may play a protective role against substance use in Turkey society.

A consistent relationship was found between gender and substance use in many studies, the prevalence rates being higher among males (Pedersen and Skrondal 1999, De Micheli and Formigoni 2004, Ljubotina et al. 2004, DiPietro et al. 2007). The male-female ratio for life-time experience of cannabis varies from 1.25:1 to 4:1 (EMCDDA 2006).

In the multivariate analysis significance of the effect of the place of residence of the family, and academic performance disappeared when they were taken into the analysis besides family income and other cofactors, so these two factors seem to be mediate the role of low family income which was found to be significantly related with substance use among regularly drinking university students. It was found that students whose parents were living in rural area or abroad, that is far from the student, tended to use substances at higher rates than those whose parents were living in urban places and most probably near the student. There are other studies pointing to the protective effect of living with one's parents (De Micheli and Formigoni 2004, DiPietro et al. 2007) and good family relations (Ljubotina et al. 2004). Proximity to parents appears to play a role in protecting the student from problem behaviors such as substance use as indicated by our results and those of other studies (Thorlindson and Bernburg 2006). In the present study it was found that university students usually begin to drink before entering the university, whereas cannabis use begins during the university life in Turkey, and the first use of alcohol and substance(s) typically occurs at home with friends. Leaving a more controlled environment of high school for a less restrictive university environment can contribute to beginning of substance use among the youth. An accompanying finding was the association between substance use and low academic performance. Low academic performance was found to be related with substance use as in other studies (Ljubotina et al. 2004, De Micheli and Formigoni 2004); this is probably a reciprocal causal relationship which requires further studies.

Table 5. Relationship between substance use and sociodemographic factors among regular alcohol users, multivariate analysis

	Substance use		
	Exp(B)	95%CI	p
Gender			
Female	1		
Male	2.643	1.265–5.522	.010
Subjective evaluation of academic performance			
Poor	1.225	.276–5.427	.790
Average	.488	.123–1.943	.309
Good	.352	.080–1.543	.166
Very good	1		.055
Accommodation of the student	1		.056
At home with family	.803	.400–1.612	.538
At home with friends	1.487	.488–4.537	.485
At home alone	.363	.114–1.158	.087
In student dormitory	3.579	.998–12.833	.050
Other			
Subjective evaluation of family income			
Poor/average	3.971	2.021–7.803	<.001
Good/very good	1		

The association of low family income and illicit substance use among regularly drinking university students in the study sample both in the univariate and the multivariate analyses was remarkable. Several studies reported that there was no significant relationship between social background and substance use (Hammer and Vaglum 1990, Pedersen and Skrondal 1999, Abdullah et al. 2002, Tot et al. 2004, De Micheli and Formigoni 2004, Ljubotina et al. 2004, Passos et al. 2006) The difference of the present study from the mentioned ones is that we investigated the factors that distinguish substance using regular drinkers from those youths who do not use illicit substances but drink regularly, while the other studies were designed to compare substance users from nonusers without considering alcohol use. Although availability of alcohol is higher compared with the other substances, why one needs to use additionally another substance at the same time having a low income level? One explanation may be that the purchase and use of substances by polysubstance users is to a large extent determined by their price, and one drug may be a substitute for another (Petry 2000, Sumnall et al. 2004). It appears that alcohol use costs more than use of other substances when the frequency of use is taken into account. It was found that most of the cannabis users (61.3%) had been using cannabis occasionally, at most once in two months, although alcohol use frequency was at least once in a month. In Turkey, affordability of one drink of alcohol, usually beer or raki, is more or less the same with one cigarette of cannabis, so monthly cost of alcohol is more than that of cannabis for a regular drinker. Another reason for a regular drinker who is in the low income group to use an illegal substance may be entering the drug market by being both a user and a seller. Such a way of gaining money is not possible for alcohol. A third explanation may be the poor family functioning in the psychosocial context, that is, a higher extent of psychological and interpersonal problems one expects in a low-income social environment. In a longitudinal study where a cohort of American urban youths were followed up from birth to 26 years of age it was found that socially and psychologically unfavorable family environment was related to substance use (Friedman and Glassman, 2000). The emotional environment under poor living conditions may also be related with substance abuse, as substances have mood-altering effects and may be functional as self-medication, cannabis and alcohol being the drugs most frequently used to relieve negative mood (Boys and Marsden 2003). Further studies are required to illuminate the nature of the relationship between low income and alcohol and substance use in youth.

This is the first large-scale multicenter university survey in Turkey which investigated correlates of substance use problems among university students. It is possible that substance users could refuse to participate in the study because of shame. Another limitation may be omission of the absentees who probably use substances at higher rates than the rest of the students. Further studies are needed which investigate findings of this study in more detail. The present study can be a basis for further research.

In conclusion it can be suggested that preventive efforts in substance use should consider the economical as well as social circumstances which can lead to substance abuse in young people.

References

Abdullah ASM, 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; 11:235-246.

Barrett SP, Darredeau C, Pihl RO. Patterns of simultaneous polysubstance use in drug using university students. Hum Psychopharmacol Clin Exp 2006; 21: 255-263.

Boys A, Marsden J. Perceived functions predict intensity of use and problems in young polysubstance users. Addiction 2003; 98: 951-963.

D'Amico EJ, Ellickson PL, Wagner EF, Turrisi R, Fromme K, Ghosh-Dastidar B, Longshore DL, McCaffery DF, Montgomery MJ, Schonlau M, Wright D. Developmental considerations for substance use interventions from middle school through college. Alcohol Clin Exp Res 2005; 29(3): 474-83.

De Micheli D, Formigoni MLOS Drug use by Brazilian students: associations with family, psychosocial,

health, demographic and behavioral characteristics. Addiction 2004; 99: 570-8.

Di Pietro MC, Doering-Silveira EB, Oliveira MPT, Rosa-Oliveira LQ, Silveira DXD. Factors associated with the use of solvents and cannabis cannabis by medical students. Addict Behav doi: 10.1016/ j.addbeh. 2006.12.004

European Monitoring Centre for Drugs and Drug Addiction. The state of the drugs problem in Europe. Annual Report, Belgium: 2006.

Friedman AS, Glassman K. Family risk factors for drug abuse. A longitudinal study of an African American urban community sample. J Subst Abuse Treat 2000; 18: 267-275.

Grant JD, Scherrer JF, Lynskey MT, Lyons MJ, Eisen SA, Tsuang MT, True WR, Bucholz KK. Adolescent alcohol use is a risk factor for adult alcohol and drug dependence: evidence from a twin design. Psychol Med 2005; 35: 1-10.

Hammer T, Vaglum P. Use of alcohol and drugs in the transitional phase from adolescence to young adulthood. J Adolesc 1990; 13: 129-142.

Ljubotina D, Galić J, Jukić V. Prevalence and risk factors of substance use among urban adolescents: questionnaire study. Croat Med J 2004; 45(1): 88-98.

McCabe SE, West BT, Wechsler H. Trends and college level characteristics associated with the non-medical use of prescription drugs among US college students from 1993 to 2001. Addiction 2007; 102: 455-65.

Palen L-A, Coatsworth JD. Activity-based identity experiences and their relations to problem behavior and psychosocial well-being in adolescence. J Adolesc, doi:10.1016/J. Adolescence 2006.11.003

Passos SRL, do Brasil PEAA, dos Santos MAB, de Aquino MTC. Prevalence of psychoactive drug use among medical students in Rio de Janeiro. Soc Psychiatry Psychiatr Epidemiol 2006; 41: 989-96.

Pedersen W, Skrondal A. Ecstasy and new patterns of drug use: a normal population study. Addiction 1999; 94(11): 1695-706.

Petry NM. Effects of increasing income on polydrug use: a comparison of heroin, cocaine and alcohol abusers. Addiction 2000; 95(5): 705-717.

Sumnall HR, Tyler E, Wagstaff GF, Cole JC. A behavioural analysis of alcohol, amphetamine, cocaine and ecstasy purchases by polysubstance misusers. Drug Alcohol Depend 2004; 76: 93-99.

Swadi H. Individual risk factors for adolescent substance use. Drug Alcohol Depend 1999; 209-224.

Thorlindson T, Bernburg JG. Peer groups and substance use: examining the direct and interactive effect of leisure activity. Adolescence 2006; 41(162): 321-38.

Tot Ş, Yazıcı K, Yazıcı A, Metin Ö, Bal N, Erdem P. Psychosocial correlates of substance use among adolescents in Mersin, Turkey. Public Health 2004; 118: 588-93.

Zapert K, Snow DL, Tebes JK. Patterns of substance use in early through late adolescence. Am J Community Psychol 2002; 30(6): 835-852.