SMOKING AND ALCOHOL CONSUMPTION AMONG A GROUP OF UNIVERSITY STUDENTS IN ANKARA: PREVALENCE AND DETERMINANTS

Bir Grup Üniversite Öğrencisi Arasında Sigara ve Alkollü Bir İçecek Tüketme Durumu: Prevalans ve Etkileyen Faktörler

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Abstract

Purpose*: The main purpose of this study was to document the prevalence and determinants of smoking and alcohol consumption among first year university students in Ankara.*

Material and Methods: *We analyzed data from 2.179 first year university students who participated in a cross-sectional survey, conducted at Hacettepe University Beytepe Campus (HUBC) in 2001. The response rate was 82.5% (1.789 students).*

Results: *Of the total 1789 participants, 59.9% were female, 52.2% were 19 years of age and younger and 97.3% were unmarried. Over one third (36.7%) of respondents reported that they smoked and 52.3% stated that they consumed alcohol. Men were more likely than women to have both smoked cigarettes and drank alcohol. The majority of the students (80.1%) started smoking before the age of 17. Smoking prevalence increased with age (OR=1.224, 95% CI =1.107-1.352; p<0.001). Alcohol consumption was found to be an important risk factor for smoking (OR=4.574; p<0.001; 95% CI =3.141-5.191). Similarly, alcohol consumption of the first year students increased with age (OR=1.179, 95% CI =1.059-1.312; p=0.003). Students who smoked cigarette consumed alcohol 4.032 times compared to the non-smokers (95% CI =3.135-5.186; p<0.001). Frequent visit to bars and restaurants were found to be a risk factor for both smoking (OR= 1.384, 95% CI =1.093-1.753; p=0.008), and alcohol consumption (OR= 2.504, 95% CI =1.969-3.185; p<0.001).*

Conclusion: *A high prevalence of smoking and alcohol consumption was found among first year students at Hacettepe University Beytepe Campus in Ankara. There was a strong association between alcohol consumption and smoking status, and most of the respondents manifest two risk taking behaviors simultaneously. Health promotion programmes focusing on smoking and alcohol drinking should therefore be instituted not only during the first year of university education, but rather at a much earlier stage in life. Further longitudinal studies are suggested to better determine the predictors of smoking and drinking among university students, and association with other risk behaviors, such as unsafe sex. Follow-up studies would also show trends in smoking and drinking among students after their first year at university.*

Key Words: *Alcohol drinking; Students; Smoking.*

Özet

Amaç*: Bu çalışmanın temel amacı Ankara'da birinci sınıf üniversite öğrencileri arasında sigara ve alkol tüketim sıklığını ve etkileyen faktörleri ortaya koymaktır.*

Gereç ve Yöntem: *Hacettepe Üniversitesi Beytepe Kampüsünde yapılan ve kesitsel tipteki bu çalışmaya katılan 2,179 birinci sınıf öğrencisinden veri toplanmıştır. Araştırmaya katılma yüzdesi 82,5'dir (1,789 öğrenci).*

Bulgular: *Katılımcıların %59,9'u kadın; %52,2'si 19 yaş ve daha genç ve %97,3'ü evli değildir. Katılımcıların üçte birinden daha fazlası (%36,7) sigara içtiğini ve %52,3'ü de alkol tükettiğini ifade etmiştir. Erkek öğrenciler kızlara göre daha sık sigara içmekte ve alkol tüketmektedirler. Öğrencilerin büyük çoğunluğu (%80.1) sigara içmeye 17 yaşından önce başlamışlardır. Sigara içme sıklığı yaş arttıkça artmaktadır (OR=1,224; %95 GA =1,107-1,352; p<0.001). Alkol tüketimi sigara içme davranışı için bir risk faktörü olarak bulunmuştur (OR=4,574; p<0,001; %95 GA =3,141-5,191). Benzer olarak birinci sınıf öğrencilerinin alkol tüketim sıklığı da yaşa başlı olarak artmaktadır (OR=1,179, 95% GA =1,059-1,312; p=0,003). Sigara içen öğrenciler sigara içmeyen öğrencilere göre 4,032 kez daha sık alkol tüketmektedirler (%95 GA =3,135-5,186; p<0,001). Sık olarak barlara ve restoranlara gitmek hem sigara içimi (OR= 1,384; %95 GA =1,093-1,753; p=0,008) hem de alkol tüketimi (OR= 2,504; %95 GA =1,969-3,185; p<0,001) için bir risk faktörü olarak bulunmuştur.*

Sonuç: *Hacettepe Üniversitesi Beytepe Kampüsünde okuyan birinci sınıf öğrencileri arasında sigara ve alkol tüketimi prevalansı yüksek bulunmuştur. Alkol tüketimi ve sigara içimi arasında güçlü bir ilişki vardır ve katılımcıların çoğu bu iki riskli davranışı eşzamanlı olarak bildirmişlerdir. Bu nedenle sigara ve alkol tüketiminin önlenmesine odaklanan sağlığı geliştirme programlarının sadece üniversitenin birinci sınıfı için değil, yaşamın daha evvelki dönemleri için kurumsallaşması gereklidir. Üniversite öğrencileri arasında sigara içme ve alkol tüketimini etkileyen faktörlerin güvenli olmayan cinsel ilişki gibi diğer riskli sağlık davranışları ile ilişkisinin ortaya koyulabilmesi için izleme çalışmaları önerilmektedir. İzleme çalışmaları aynı zamanda öğrencilerin sigara içme ve alkol tüketme eğilimlerini de gösterecektir.*

Anahtar Kelimeler: *Alkol tüketimi; Öğrenciler; Sigara.*

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Introduction

The World Health Organization (WHO) has identified smoking and alcohol drinking "major risks" for health (1). Despite a decline in the prevalence of smoking in some adult populations, the number of young smokers continue to increase around the world (2,3). As in some other countries in the world, the prevalence of smoking in Turkey is very high (4,5). In a nationwide survey conducted in 2002 among adults, the prevalence of smoking was determined to be 50.9% among males and 25.5% among females (6).

Many young people begin drinking alcohol in their teens. Alcohol consumption among European countries has risen since 1990 and there is a similar trend evident in developing countries such as Bolivia and Brazil (7). There is also a global trend towards the earlier initiation of consumption. This trend is disturbing because early initiation and regular drinking during adolescence are associated with a high risk of alcohol related problems in early adulthood (7). Drinking in campuses represents one of the most serious health and public safety risks to both the students and the surrounding college community. Research has shown that up to 95% of college students stated that they had consumed alcohol (8). Identifying youth at risk for alcohol initiation and continued use is a potentially efficient and effective means for targeting prevention programmes (9).

The main aim of this paper is to document the prevalence and determinants of smoking and alcohol consumption among first year university students in Ankara.

Material and Methods

This study was conducted at the Hacettepe University Beytepe Campus in Ankara. The university students represent a heterogeneous profile. Most of the participants were originated from the central, western and southern parts of Turkey.

We analyzed data for 1789 first year university students who participated in a cross-sectional study, conducted at Hacettepe University Beytepe Campus (HUBC) in 2001. This study was financed with support from WHO Special Program of Research, Development and Research Training in Human Reproduction (HRP).

The project entitled "Situation of, and Influencing Factors on Sexual and Reproductive Health of Adolescents in Turkey", also evaluated the sexual and reproductive health knowledge, perceptions and attitudes of the students. These topics are not reported in this paper.

Hacettepe University has 2 campuses: Sıhhiye and Beytepe. Health-related faculties and departments are located on the Sıhhiye Campus, and the other faculties (the Faculties of Economics Applied Sciences including Physics, Chemistry, Mathematics, Statistics and Biology, Engineering, Education including teachers training in foreign languages, applied sciences and pedagogy, and Literature) are located on the Beytepe Campus. To exclude the influence of "health education" in health related faculties and departments, this study was conducted on students at the Beytepe Campus where non-health related faculties and departments are located.

The list of the first year classes for each faculty was obtained from the university administration and a self-administered questionnaire under the supervision of 25 interviewers was administered to the entire study group (1.789 participants) on the same day.

There were totally 75 questions in the questionnaire. The students were asked about their smoking and alcohol drinking status via 2 separate questions in the questionnaire. Their answers were categorized as "never", "not often", "often", and "quitted" for both smoking and alcohol consumption. "Not often" responses were accepted as "social smokers/drinkers" and "often" responses were accepted as "regular smokers/ drinkers".

Data were analyzed using Statistical Package for Social Sciences (SPSS)-version 10.0. Analyses included frequency and percent distributions, calculations of means, standard deviations, medians, and percentiles. The significance of differences was assessed with chi-square tests for categorical variables.

Multivariate analyses included backward logistic regression modeling for both smoking and alcohol consumption. A p value of <0.05 was considered statistically significant. Odds ratios (OR) with 95% confidence intervals (CI) were calculated to assess the independent effect of predictor variables on the results.

Results

Socio-demographic characteristics of the participants are shown in Table 1. Of the total participants, 59.9% were female, 52.2% were 19 years of age or younger, 97.3% were single, 50.4% had graduated from either an "Anatolia, Super or a Science" high school", and 87.7% had health insurance. "Anatolia", "Super" and "Science" high schools have an English language based curriculum.

Selected socio-demographic background characteristics by sex are shown in Table 2. Males were more likely to prefer bars and restaurants (p=0.012). Similarly, males were, on average, approximately one year older than females (p<0.001).

Of the 1.789 participants, 648 (36.7%) subjects reported that they smoked and 925 (52.3%) reported that they consumed alcohol. Males both smoked and consumed alcohol more than females. The majority of the students (80.1%) started smoking before the age of 17 and 92.0% smoked less than one packet of cigarette/day (Table 3).

Smoking prevalence increased with age (OR=1.224, 95% CI =1.107-1.352; p<0.001). It was found that males were 1.166 times more likely to smoke than females did. However, the relationship between sex and smoking was not statistically significant (95% CI =0.926-1.480; p=0.198). Students whose parents were not married (divorced, widowed, etc) smoked 1.9 times more than those whose parents were married (95% CI =1.174-3.076; p=0.009). Students who did not live with their family smoked 1.433 times more than those living with their family (p=0.009; 95% CI =1.130-1.816). Alcohol consumption was found to be a risk factor for smoking. The relationship between alcohol consumption and smoking was statistically significant (OR=4.574, 95% CI =3.141-5.191; p<0.001). Frequenting bars and restaurants was found to be a risk factor for smoking (OR= 1.384, 95% CI =1.093-1.753; p=0.008) (Table 4).

The frequency of alcohol drinking among first year students increased with age (OR=1.179, 95% CI =1.059-1.312; p=0.003). Males stated alcohol drinking 1.332 times more than females did (95% CI =1.041-1.704; p=0.023). The students whose mothers were primary school graduates and above consumed alcohol 3.23 times more than those whose mothers were illiterate and primary school graduates (95% CI =2.521-4.138; p<0.001). Smoking was found to be a risk factor for alcohol consumption (OR=4.032, 95% CI =3.135-5.186; p<0.001). Frequenting bars and restaurants was found to be a risk factor for alcohol drinking (OR= 2.504; 95% CI =1.969-3.185; p<0.001) (Table 5).

Discussion

This study explored the prevalence of alcohol consumption and smoking and some associated factors among university students in HUBC in Ankara. Of the 1.789 subjects, 20.5% reported that they smoked regularly, and 3.3% reported they comsumed alcohol regularly. The "ever" experience of these two behaviors was 36.7% for smoking and 52.3% for ever alcohol consumption. Among young people, the prevalence of alcohol drinking is found to be higher among students who are 21 or older. The rate of smoking is higher among students of 20 years of age and older (8). Our results are consistent with this information (OR=1.224, 95% CI =1.107-1.352; p<0.001 for smoking; OR=1.179, 95% CI =1.059-1.312; p=0.003 for alcohol drinking). The higher prevalence of smoking at older ages might have been caused of campus life, peer influence, and the feeling of uncertainty that the majority of students have about their future. As age was found to be a risk factor for both smoking and alcohol consumption, well-planned prevention programs are recommended to be integrated into the university curriculum. The prevention programs starting at university may be too late.

Alcohol drinking was found to be a risk factor for smoking. The relationship between alcohol drinking and smoking was statistically significant (OR=4.574, 95% CI =3.141-5.191; p<0.001) (Table 4). Smoking was found to be a risk factor for alcohol drinking (OR=4.032, 95% CI =3.135-5.186; p<0.001). It is not surprising that these two risk-taking behaviors influence each other. Many adolescents engage in risk taking behaviors whic are harmful or dangerous to themselves and others, with consequences to their health and well being that may be immediate or long-term. Smoking, alcohol consumption, the use of illegal substances, weapon carrying, sexually risk taking behaviors, etc. are often found together and occur concurrently at young ages (10). In a study conducted by McKee et al, it was found that smokers had higher levels of alcohol use and reported greater subjective effects from the simultaneous use of alcohol and tobacco (10,11). Prevention and control strategies against smoking and alcohol consumption are recommended to be conducted concurrently for our study population.

Frequenting bars and restaurants was found to be a risk factor for both smoking (OR= 1.384, 95% CI =1.093-1.753; p=0.008) and alcohol consumption (OR= 2.504, 95% CI =1.969-3.185; p<0.001) (Table 4,5). People usually frequent bars and restaurants with friends for fun (for social issues), and smoking is not forbidden at such places in Turkey (although there is a national anti-tobacco law (4). In 2004, the Turkish Parliament assigned the Framework Convention on Tobacco Control. Hopefully, smoking at bars and restaurants in Turkey will be banned as in some states in the US, and some European countries (12,13).

It is usually assumed that parents living together (nuclear family) may provide better environmental conditions in terms of health for their children (or adolescents) compared to parents who are divorced, etc. This may be a protective factor for the younger generation not to start smoking or alcohol consumption. In the present study, the results supported this hypothesis. Students whose parents were not married (divorced, widowed, etc) smoked 1.9 times more than those whose parents were married (95% CI =1.174-3.076; p=0.009). A similar relationship was found for alcohol consumption. However, this relationship was not statistically significant (OR=1.427, 95% CI =0.834-2.442; p=0.194).

Prevention strategies should include informing, educating, and training individuals so that they have the necessary information, skill and confidence to choose not to abuse alcohol, not to be a smoker, etc. These kinds of strategies should be implemented and developed primarily on campus and in the university community (14).

Faculties and departments at the study campus (Beytepe) are mainly engineering, linguistic and other social departments. Hacettepe University has another campus (Sıhhiye) in which the Medical Faculty, Nursing Faculty and other health sciences faculties and vocational schools are located. These departments have regular health-focusing academic programs such as “healthy life styles”, “risk taking behaviors” within their curriculum. However, the students at HUBC have less opportunity to study health related topics compared to the other campus students. The results of this survey oriented the decision-makers and administrators to re-assess and re-organize the programs of the Student Health Centers.

Conclusion and Recommendations

This study showed various factors affecting smoking and alcohol consumption concurrently. Therefore, appropriate intervention programs should be planned and implemented to deal with both. Students should also be directed to internalize other healthy life style behaviors such as physical exercise and an appropriate and balanced diet.

Further studies with follow-up components are highly recommended to obtain more explanatory results. Follow-up studies could also demonstrate the effects of interventions on smoking and alcohol consumption prevalence.

Intervention programs should be integrated into the routine health services for the study population. This

may be achieved by integrating preventive strategies into the routine services of Student Health Centers (i.e. "Youth Friendly Services") of the university.

Smoking is an acquired, life style social behavior. Individuals (especially children and younger ages) imitate the behavior of their parents, peers and other role models, especially those with whom they identify in someway admire (15). As health staff, academics are role models for students, and they should be thus trained in the health aspects of smoking and alcohol consumption. Concurrently, they should be informed of their responsibilities in terms of being "role models" for the students.

Furthermore, we believe that "health" courses may be added to the curriculum of each faculty and during these courses; students should be informed about major health/illness issues.

Similar approaches should be prioritized within the health system of the country. In Turkey, there is such an integrated primary prevention based health system. In addition, risk taking behaviors should be stressed to a greater extent than they are today.

Table 1. Socio-demographic characteristics of students (HUBC, May- 2001)

Characteristics	n	%
Sex (n=1.789)		
Female	1071	59.9
Male	718	40.1
Age group (n=1.775)		
19	926	52.2
20-24	838	47.2
25	11	0.6
Marital status (n=1.794)		
Single	1746	97.3
Married	5	0.3
Living with partner	28	1.6
Engaged	6	0.3
Other *	9	0.5
The last high school graduated (n=1.794)		
Public	547	30.5
Anatolia, super, science	905	50.4
Private	154	8.6
Vocational	155	8.6
Imam-Hatip [a]	8	0.5
Other**	25	1.4
Health insurance (n=1.709)		
No	210	12.3
Yes	1499	87.7
Retirement fund	724	48.3
Bag-Kur [b]	195	13.0
Social Insurance Organization (SIO)	512	34.2
Private	55	3.7
Green card	7	0.4
Medico-social center	6	0.3

* "have a partner but not living together", "have no partner"

** "Open university", "vocational college"

[a] religious high school

[b] kind of social insurance supported by government including tradesmen and self-employed

Table 2. Characteristics of students by sex (HUBC, May- 2001)

Characteristics	Male n (%)	Female n (%)	Total n (%)	Chi square	p
Age group (n=1.775)				45.0	**<0.001**
19	11 (5.8)	110 (10.4)	151 (8.6)		
20-24	260 (36.9)	511 (48.3)	771 (43.7)		
25	404 (57.3)	487 (41.3)	841 (47.7)		
mean	19.98±1.52	19.5±1.05	19.7±1.3		
median	20	19	19		
range	16-34	17-28	16-34		
Marital status of parents (n=1.782)			0	0.264	0.607
Married	635 (88.9)	958 (89.7)	1583 (89.4)		
Not married, divorced, etc	79 (11.1)	110 (10.3)	189 (10.6)		
Place of residence (n=1.685)				0.238	0.625
With family	280 (39.0)	430 (40.1)	710 (39.7)		
Other (with friends, in dormitory)	438 (61.0)	641 (59.9)	1079 (60.3)		
Education of father (n=1.685)				1.073	0.300
Secondary school and lower	208 (30.9)	289 (28.6)	497 (29.5)		
High school and above	465 (69.1)	723 (71.4)	1188 (70.5)		
*					
Education of mother (n=1.750)				1.834	0.176
Secondary school and lower	322 (46.3)	453 (43.0)	775 (44.3)		
High school and above	374 (53.7)	601 (57.0)	975 (55.7)		
Thoughts of students about economic status of the family (n=1.761)				0.024	0.878
Wealthy	54 (7.7)	83 (7.9)	137 (7.8)		
Medium, poor	651 (92.3)	973 (92.1)	1624 (92.2)		
Frequenting bars, restaurants, etc (n=1.587)				6.284	**0.012**
Rare/never	323 (49.8)	528 (56.2)	851 (53.6)		
Frequently	325 (50.2)	411 (43.8)	736 (46.4)		

Table 3. Characteristics of smoking and alcohol use of students by sex (HUBC, May-2001)

	Male n (%)	Female n (%)	Total n (%)	Chi square	p
Status of smoking (n=1.768)				33.390	**<0.001**
Never	371 (52.3)	666 (62.9)	1037 (58.7)		
Ever, current	296 (41.7)	352 (33.3)	648 (36.7)		
Social smoker	*109 (15.3)*	*177 (16.7)*	*286 (16.2)*		
Regular smoker	*187 (26.3)*	*175 (16.6)*	*362 (20.5)*		
Ever, former	43 (6.0)	40 (3.8)	83 (4.6)		
Total*	710 (41.2)	1058 (59.8)	1768 (100.0)		
Age of onset (n=649)				17.859	**<0.001**
<17	171 (55.5)	139 (40.8)	310 (47.8)		
17	51 (16.6)	97 (28.4)	148 (22.8)		
>17	86 (27.9)	105 (30.8)	191 (29.4)		
Total*	308 (47.5)	341 (52.5)	649 (100.0)		
mean	15.9±2.47	16.67±1.86	16.30±2.17		
median	16	17	17		
range	7-23	8-23	7-23		
Number of cigarettes/day (pack) (n=637)				49.023	**<0.001**
<1	100 (33.3)	200 (59.3)	300 (47.1)		
1	112 (37.3)	95 (28.2)	207 (37.3)		
>1	88 (29.3)	42 (12.5)	130 (20.4)		
Total*	337 (47.1)	300 (52.9)	637 (100.0)		
Alcohol consumption (n=1.768)				43.420	**<0.001**
Never	264 (37.1)	541 (51.0)	805 (45.5)		
Ever, current	419 (59.0)	506 (48.0)	925 (52.3)		
Social drinker	*372 (52.4)*	*494 (46.6)*	*866 (49.0)*		
Regular drinker	*47 (6.6)*	*12 (1.4)*	*59 (3.3)*		
Ever, former	27 (3.9)	11 (1.0)	38 (2.2)		
Total*	710 (40.2)	1058 (59.8)	1768 (100.0)		

**Row percentage, others column percentage*

Table 4. OR and CI values for smoking according to selected predictors (HUBC, May-2001) (n=1,768)

	Smoking (%)	Odds Ratio	95% CI	p
Age[a]		1.224	1.107-1.352	**<0.001**
Sex[b]				0.198
Female	37.1	*1.00		
Male	47.7	1.166	0.926-1.480	
Education of father [c]				0.275
Illiterate/primary/secondary	37.5	*1.00		
High school and above	43.2	0.843	0.620-1.146	
Education of mother [d]				0.058
Illiterate and primary	39.2	*1.00		
Secondary and higher	42.6	0.787	0.614-1.008	
Marital status of parents [e]				**0.009**
Married	40.0	*1.00		
Divorced, parent died, etc.	51.6	1.900	1.174-3.076	
Place of residence [f]				**0.003**
With a family member	37.7	*1.00		
Not with a family member	43.5	1.433	1.130-1.816	
Alcohol consumption [g]				**<0.001**
No	23.1	*1.00		
Yes	57.5	4.574	3.141-5.191	
Economic status of the family [h]				0.803
Middle and poorer	41.1	*1.00		
Wealthy	42.6	0.947	0.629-1.425	
Frequenting bars, restaurants [i]				**0.008**
No	35.0	*1.00	1.093-1.753	
Yes	49.0	1.384		

**reference category*

[a] *adjusted for sex, education of father, education of mother, marital status of parents, place of residence, alcohol consumption, economic status of the family, frequenting bars, restaurants*

[b] *adjusted for age, education of father, education of mother, marital status of parents, place of residence, alcohol consumption, economic status of the family, frequenting bars, restaurants*

[c] *adjusted for age, sex, education of mother, marital status of parents, place of residence, alcohol consumption, economic status of the family, frequenting bars, restaurants*

[d] *adjusted for age, sex, education of father, marital status of parents, place of residence, alcohol consumption, economic status of the family, frequenting bars, restaurants*

[e] *adjusted for age, sex, education of father, education of mother, place of residence, alcohol consumption, economic status of the family, frequenting bars, restaurants*

[f] *adjusted for age, sex, education of father, education of mother, marital status of parents, alcohol consumption, economic status of the family, frequenting bars, restaurants*

[g] *adjusted for age, sex, education of father, education of mother, marital status of parents, place of residence, economic status of the family, frequenting bars, restaurants*

[h] *adjusted for age, sex, education of father, education of mother, marital status of parents, place of residence, alcohol consumption, frequenting bars, restaurants*

[i] *adjusted for age, sex, education of father, education of mother, marital status of parents, place of residence, alcohol consumption, economic status of the family*

Table 5. OR and CI values for alcohol consumption according to selected predictors (HUBC, May-2001) (n=1,768)

	Alcohol consumption (%)	Odds Ratio	95% CI	p
Age [a]		1.179	1.059-1.312	**0.003**
Sex [b] (n=1768)				**0.023**
Female	47.8	*1.00		
Male	59.0	1.332	1.041-1.704	
Education of father [c]				0.253
Illiterate/primary/secondary	39.5	*1.00		
High school and above	57.6	0.833	0.609-1.140	
Education of mother [d]				**<0.001**
Illiterate and primary	37.9	*1.00		
Primary and higher	64.0	3.230	2.521	-4.138
Marital status of parents [e]				0.194
Married	50.8	*1.00		
Divorced, parent died, etc.	64.7	1.427	0.834-2.442	
Place of residence [f]				0.061
Not with a family member	50.2	*1.00		
With a family member	55.4	1.267	0.989-1.623	
Smoking [g]				**<0.001**
No	37.5	*1.00		
Yes	73.0	4.032	3.135-5.186	
Economic status of the family [h]				0.977
Middle and poorer	51.6	*1.00		
Wealthy	57.7	0.994	0.647-1.525	
Frequenting bars, restaurants [i]				**<0.001**
No	40.9	*1.00		
Yes	68.6	2.504	1.969-3.185	

**reference category*

[a] *adjusted for sex, education of father, education of mother, marital status of parents, place of residence, smoking status, economic status of the family, frequenting bars, restaurants*

[b] *adjusted for age, education of father, education of mother, marital status of parents, place of residence, smoking status, economic status of the family, frequenting bars, restaurants*

[c] *adjusted for age, sex, education of mother, marital status of parents, place of residence, smoking status, economic status of the family, frequenting bars, restaurants*

[d] *adjusted for age, sex, education of father, marital status of parents, place of residence, smoking status, economic status of the family, frequenting bars, restaurants*

[e] *adjusted for age, sex, education of father, education of mother, place of residence, smoking status, economic status of the family, frequenting bars, restaurants*

[f] *adjusted for age, sex, education of father, education of mother, marital status of parents, smoking status, economic status of the family, frequenting bars, restaurants*

[g] *adjusted for age, sex, education of father, education of mother, marital status of parents, place of residence, economic status of the family, frequenting bars, restaurants*

[h] *adjusted for age, sex, education of father, education of mother, marital status of parents, place of residence, smoking status, frequenting bars, restaurants*

[i] *adjusted for age, sex, education of father, education of mother, marital status of parents, place of residence, smoking status, economic status of the family*

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