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Prevalence and determinants of adolescent smoking in Ankara, Turkey

DİLEK ASLAN[1], NAZMİ BİLİR[1], HİLAL ÖZCEBE[1], CHRISTIANE STOCK[2], NAZAN KÜÇÜK[3]

[1]Hacettepe University, Faculty of Medicine, Department of Public Health, Ankara-Turkey, [2]University of Syddansk, Institute of Public Health, Unit for Health Promotion Research, Esbjerg-Denmark, [3]Istanbul University, Cerrahpaşa Faculty of Medicine, Department of Public Health, Istanbul-Turkey

ABSTRACT

Smoking is a well-known preventable cause of cancer. Today, almost 1.3 billion of people are smokers and this number is expected to increase to 1.6 in 2025 globally. In this study, we aimed to determine prevalence and determinants of smoking among first year students at Hacettepe University. In 2004, the total number of the subjects participated in the study were 1050. Of the total participants, 69.0% were female. Mean age of the students was 19.8±1.6 years. "Alcohol consumption", "being less careful about his/her self health care", "not having smoke-free policy at the university", and "not supporting smoke free cafeteria concern at the university" were found to be risk factors of smoking. First year students, in a period where the prevalence of this addiction usually tends to increase, are a particular target group for the implementation of prevention activities.
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KEY WORDS:

University students, smoking, determinants

INTRODUCTION

Smoking is a well-known preventable cause of cancer (1). Evidence on the active smoking and cancer has grown rapidly since the Surgeon General's Report in 1964 (2). Today, almost 1.3 billion of people are smokers and this number is expected to increase to 1.6 in 2025 globally (1).

While smoking was once perceived as a rich man's habit, smoking prevalence has decreased in high-income countries in recent years and it has drastically risen in low-middle income countries. Similarly, little or no education and a low socio-economic status are indicators of smoking prevalence in high, medium and low-income countries (3). However, this may not be true for adolescents. In most of the studies, adolescents from families of higher socio-economic status were at greater risk for cigarette, alcohol and substance use than adolescents from families of lower socio-economic status (4,5).

Despite a decline in the prevalence of smoking in some adult populations, the number of young smokers continues to increase (6,7). The prevalence of smoking is very high in Turkey (8,9). In a nationwide survey conducted in 2002, the prevalence of smoking was 45.3% among males and 18.3% among females that are 15 years and older (10).

There is an increasing trend of smoking prevalence from the first grade to the last at universities. For example, smoking prevalence was found to be 12.0% among the

first year pharmacy students of Hacettepe University and the prevalence increased to 17.5% in the last year (11). Kocabaş et al. (12) conducted a study at seven medical schools in Turkey and reported the prevalence of daily smoking among first year medical students as 11.8%. The prevalence was 30.2% for the last year. Results from another study at a university located in southern-west part of Turkey, the smoking prevalence among the last year university students was found to be higher (49.8%) than the first year students (34.0%) (13). All of these prevalence rates underline the fact that early university years are important to carry out anti-smoking activities for preventing students from starting smoking.

Although there are many small-scaled prevalence studies, it might have been a better approach to evaluate smoking issue in a larger population in collaboration with international partners. Based on this rationale, we aimed to determine prevalence and determinants of smoking among first grade students at Hacettepe University in this study. Besides smoking, other health-related life style characteristics of the students such as dieting, safe sex, alcohol drinking, substance use, physical exercise were interviewed in the same questionnaire; however, they are not presented in this paper.

MATERIALS AND METHODS

This descriptive study is a part of an international multicenter study. We were almost dependent to the other centers for deciding the number of the study population.

In the 2003-2004 academic year, the total population of the first year students at Hacettepe University was 5917 at nine faculties and 14 vocational high schools. In this study, we included 11 faculties and vocational high schools (Faculty of Dentistry, Faculty of Pharmacy, Faculty of Educational Sciences, Faculty of Science, Faculty of Art, Faculty of Economics, Faculty of Engineering, Faculty of Medicine, School of Nursing). Totally 1050 students participated in the study.

Data were analyzed using Statistical Package for Social Sciences (SPSS)-version 11.0. 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 analysis included backward logistic regression modeling for smoking. A probability of less than 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 outcomes. Participation of males (30.1%) was lower than females (69.9%) in the study; for this reason males and females were analyzed separately in logistic modeling. Smoking status of the students (males and females separately) was adjusted for "alcohol drinking, place of residence, thoughts of students about income per month, students' self-care of health, perception about his/her health status, supporting "smoke free" approach at university, agree with the "smoke-free cafeteria" concern at the campus, expect health programs/activities to be organized at the campus".

RESULTS

Socio-demographic characteristics of the participants were shown in table 1. Of the total participants, 69.0% were female; 50.1% were 19 years of age or younger; 88.9% were single or do not have a boy/girl friend; 31.3% of their mother graduated from primary school; 27.5% of their father graduated from high school; 53.5% lived with their families; 46.4% of them had 250 YTL and higher income per week.

Selected characteristics by sex were shown in table 2. Males were on average about a year older than females (p=0.001). Female students' fathers were higher educated when compared to males' fathers (p=0.043). Male students' self care for their health was higher when compared to females (p=0.019).

In table 3, the characteristics about smoking and alcohol consumption of the students by sex were presented. Almost one out of four subjects (25.1%) reported smoking, and 380 students (38.7%) reported use of alcohol. Males both smoked and drank alcohol more than females. Majority of the students (70.7%) thought that "smoke free" policy at the university should have been supported. The percent of the females (71.8%) who agreed that "smoke-free cafeteria" at the campus to be a priority was higher than the percent of the males (65.0%) (p=0.038).

In table 4 (males) and 5 (females), we presented associations between the selected risk factors and smoking by using logistic regression modeling. For males, there were significant positive associations between "alcohol consumption (OR=5.0, 95% CI=2.6-10.1; p<0.001)"; "not to look after his health with great attention (OR=2.1, 95% CI=1.1-4.1; p=0.026)"; "not to agree with the idea 'smoke-free policy at university should be supported' (OR=4.5, 95% CI=2.2-9.2; p<0.001)"; and "not to agree with the idea 'smoke-free cafeteria at the campus as a priority' (OR=2.8, 95% CI=1.4-5.4; p=0.003)". Similar associations were found for females.

Table 1
Selected socio-demographic background characteristics of the students (HU, 2004)

Characteristics	n	%
Sex (n=1037)		
Female	725	69.9
Male	312	30.1
Age group (n=1032)		
≤19	517	50.1
≥20	515	49.9
Marital status (n=933)		
Single, do not have a boy/girl friend	829	88.9
Single, but have a boy/girl friend	75	8.0
Engaged	28	3.0
Married	1	0.1
Educational status of mother (n=1032)		
Illiterate	50	4.8
Primary school graduate	323	31.3
Secondary school graduate	129	12.5
High school graduate	284	27.5
University graduate	57	5.5
Educational status of father (n=1031)		
Illiterate	6	0.6
Primary school graduate	166	16.1
Secondary school graduate	117	11.3
High school graduate	284	27.5
University graduate	106	10.3
Students live with (n=1037)		
Family	482	46.5
Else (with friends, at dormitory)	555	53.5
Income per month (YTL)* (n=948)		
<250	415	43.8
250	93	9.8
>250	440	46.4
Mean±SD		315.9±395.5
Median		250

**New Turkish Lira (equals around 1.35 US dollars)*

Table 2
Selected characteristics of the students by sex (HU, 2004)

Characteristics	Male		Female		Total		Chi square	p-value
	n	%	n	%	n	%		
Age group (n=1032)							11.25	0.001
≤19	385 (58.1)		337 (46.7)		517 (50.1)			
≥20	130 (41.9)		385 (53.3)		515 (49.9)			
Mean	19.7±1.6		20.1±1.7		19.8±1.6			
Median	20		19		20			
Min-max	17-28		16-31		16-34			
Students live with (n=1037)							1.499	0.222
Family	136 (43.6)		346 (47.7)		482 (46.5)			
Not with family (friends, at dormitory)	176 (56.4)		379 (52.3)		555 (52.5)			
Education of mother (n=1032)							0.958	0.328
High school and above	152 (49.0)		378 (52.4)		530 (51.4)			
Secondary school and lower	158 (51.0)		344 (47.6)		502 (48.6)			
Education of father(n=1032)							4.104	0.043
High school and above	209 (67.6)		533 (73.8)		742 (72.0)			
Secondary school and lower	100 (32.4)		189 (26.2)		289 (28.0)			
Thoughts of students about income per month (n=1029)							3.099	0.078
Sufficient	192 (61.7)		484 (67.4)		676 (7.8)			
Insufficient	119 (30.2)		234 (32.6)		353 (92.2)			
Look after self-health with great attention (n=1026)							5.478	0.019
Yes	409 (57.0)		151 (49.0)		560 (54.6)			
No	309 (43.0)		157 (51.0)		466 (45.4)			
Perception about his/her health status (n=1020)							0.244	0.621
Well	210 (68.9)		481 (67.3)		691 (67.7)			
Not well	95 (31.9)		234 (32.7)		329 (32.3)			

Table 3
Characteristics about smoking and alcohol consumption of the students by sex (HU, 2004)

	Male		Female		Total		Chi square	p-value
	n	%	n	%	n	%		
Status of smoking (n=971)							11.101	0.004
Do not smoke	203 (70.2)		524 (76.8)		727 (74.9)			
Sometimes	22 (7.6)		65 (9.5)		87 (9.0)			
Frequently	64 (22.1)		93 (13.6)		157 (16.1)			
Alcohol consumption (n=981)							13.338	<0.001
No	154 (52.6)		447 (65.0)		601 (61.3)			
Yes	139 (47.4)		241 (35.0)		380 (38.7)			
"Smoke free" policy at university should be supported (n=951)							2.564	0.109
Agree	189 (67.0)		483 (72.2)		672 (70.7)			
Do not agree	939 (33.0)		186 (27.8)		279 (29.3)			
Agree that "smoke-free cafeteria" at the campus is a priority (n=950)							4.286	0.038
Yes	180 (65.0)		483 (71.8)		663 (69.8)			
No	97 (35.0)		190 (28.2)		287 (30.2)			

DISCUSSION

Risky behaviors for development of chronic diseases such as cancer, cardiovascular diseases are various; but tobacco differs from the others in terms of its unique characteristics of being a legal product, which kills when used as recommended by the manufacturer (14). This special feature of tobacco makes the problem more complicated and difficult to struggle. Although a global approach is required, each region (or country) should have specific struggling methods for tobacco control. For the European countries five control measures were found to have the potential to reduce inequalities in smoking. These include banning tobacco advertising, raising tobacco prices, workplace cessation interventions, the free supply of nicotine replacement therapy (NRT), and the use of telephone cessation help-lines (3). For the Turkish adolescents, probably the most effective method is banning tobacco advertisements and raising tobacco prices. The Turkish government is successful for these two interventions. The other recommendations are thought to be more effective for the older ages.

Prevalence of males' smoking and alcohol consumption was found to be higher than females' (Table 3). The results are similar with the other study findings (9,11). This might have been because of the internalization of "gender" roles by the participants.

The relation between "smoking" and "alcohol consumption" has been well-established for several times since now. Smoking, alcohol drinking, substance use, weapon carrying, sexually risk taking behaviors, etc. are often go together at these ages (15). In a study conducted by McKee et al. (16) it was found that smokers had higher levels of alcohol use and reported greater subjective effects from the simultaneous use of alcohol and tobacco. In our study, we also found alcohol drinking as an influencing factor of smoking for both sexes (Tables 4 and 5).

Higher rates for smoking occur in adolescents whose parents smoke when compared to those whose parents do not (4). Kandel and Wu (17) found that both maternal smoking and quality of parent-child interaction influences current smoking. However, in our study, we did not ask parents' smoking status and for this reason we could not analyze the influence of this variable on the students' smoking status. Peer influence was another well known risk factor for adolescents' smoking (11).

Those who had looked after their self-health with great attention were less likely to smoke (Tables 4 and 5). Self-care is the complex acquired ability to know and meet one's deliberate continuing requirements for deliberative, purposive action to regulate their own human functioning

and development. Self-care varies with respect to an individual's development, health state, educational experiences, cultural influences, and resources of daily living (18). Probably, students who declared higher sensitivity for their health were expected to practice healthy life-style activities more frequently.

We did not find a statistically significant difference between smoking level and students' perception about their health status. This is also a subjective assessment of health and probably does not capture the "real health status" of the students, which may influence their smoking status.

Although adolescents from families of higher socio-economic status were at greater risk for cigarette, alcohol and substance use than adolescents from families of lower socio-economic status, probably because the former had the finances to obtain these substances, we did not find a statistically significant relationship between income level and smoking status of the students (4,5). We asked the students' perception about their income level and this might have not reflected the socio-economic status of the family objectively.

As mentioned for several times tobacco is one of the most important international public health priorities around the world and pre-adolescents, who are in the period where this addiction usually begins, constitute a particularly interesting target group for the implementation of prevention activities (19).

Table 4
ORs and CIs for males' smoking status according to selected predictors (HU, 2004) (n=255)

	Smoking status (%)	Odds Ratio**	95% CI	p-value
Alcohol consumption		5.0	2.6 -10.1	<0.001
No*	14.8			
Yes	47.4			
Students live with		1.7	0.9 -3.4	0.130
Family*	24.0			
Else (with friends, at dormitory)	34.4			
Thoughts of students about income per month		0.6	0.3-1.1	0.102
Sufficient*	23.5			
Insufficient	33.3			
Look after self-health with great attention		2.1	1.1-4.1	0.026
Yes*	22.4			
No	37.0			
Perception about his/her health status		1.2	0.6-2.5	0.547
Well*	26.4			
Not well	37.1			
"Smoke free" policy at university should be supported		4.5	2.2-9.2	<0.001
Agree*	17.0			
Do not agree	37.8			
Agree that "smoke-free cafeteria" at the campus is a priority		2.8	1.4-5.4	0.003
Yes*	18.0			
No	51.0			
Expect health programs/activities to be organized at the campus		0.6	0.3-1.3	0.236
Yes*	27.8			
No	32.9			

**reference category*
*** adjusted for rest of the predictors in the table*

Table 5
ORs and CIs for females' smoking status according to selected predictors (HU, 2004) (n=609)

	Smoking status (%)	Odds Ratio**	95% CI	p-value
Alcohol consumption		6.0	3.9-9.4	<0.001
No*	11.5			
Yes	44.9			
Students live with		1.1	0.7-1.7	0.798
Family*	23.1			
Not with family (friends, at dormitory)	23.2			
Thoughts of students about income per month		0.7	0.5-1.2	0.214
Sufficient*	18.6			
Insufficient	23.6			
Look after self-health with great attention		2.6	1.7-4.1	<0.001
Yes*	15.5			
No	33.3			
Perception about his/her health status		1.2	0.8-2.0	0.369
Well*	19.7			
Not well	30.6			
"Smoke free" policy at university should be supported		1.9	1.1-3.3	0.015
Agree*	17.1			
Do not agree	38.9			
Agree that "smoke-free cafeteria" at the campus is a priority		2.8	1.7-4.8	<0.001
Yes*	16.0			
No	40.4			
Expect health programs/activities to be organized at the campus		0.7	0.4-1.2	0.166
Yes*	22.8			
No	22.9			

**reference category*
*** adjusted for rest of the predictors in the table*

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