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How Much Do They Know? Determination of Knowledge about Harmful Effects of Smoking and Alcohol Use in University Students and the Predictors of Substance Use: A Cross-Sectional Study

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Main Points

- Smoking and alcohol use are common among university students.
- Faculty of Health Science and Medicine students had lower smoking and alcohol use rates compared with other faculties.
- Faculty of Health Science and Medicine students have more knowledge about harmful effects of smoking and alcohol use.
- The thought that alcohol is beneficial for health can be responsible for the usage of alcohol among other faculty's students.
- Knowledge about harmful effects of smoking and alcohol use should improve among university students.

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Abstract

Smoking and alcohol consumption have a significant share in the occurrence of chronic diseases, especially cardiovascular heart disease. This study aims to evaluate university students' level of knowledge on the harmful effects of smoking and alcohol use on health and determine the predictors of smoking and alcohol use. A total of 912 university students, from faculties of health sciences (n = 444) and other faculties (n = 468), participated in the study. The questionnaire consists of three parts and 44 questions. It was determined that students at the Faculty of Health had lower smoking rates (14.4%) and alcohol use (15.8%) than others. The idea that alcohol use is beneficial for health is more common among students of technical and social sciences faculties (26.7%). It was found that Health Sciences and Medical students had a higher level of knowledge of the effects of smoking and alcohol use on health. Besides, the predictors of smoking and alcohol use were determined as department, alcohol use/smoking in their family, intention to quit smoking, and thinking alcohol is beneficial for health. It might be one of the reasons for university students' smoking and alcohol use is inadequate knowledge about the harmful effects of these substances, including courses on the detrimental impact of smoking and alcohol use in the curriculum can be beneficial for improving knowledge and might help reduce the risk of chronic diseases. Public health strategies should be planned for both families and students, and it should be target increase knowledge about harmful effects of smoking.

Keywords: Alcohol, health, knowledge level, smoking, university students

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Introduction

As defined by the World Health Organization (WHO), health is not only the absence of diseases and disorders but also being in a good physical, mental, and social state as a whole (WHO, 2006). The top 10 global causes of mortality are listed as ischemic heart disease, stroke, chronic obstructive pulmonary disease (COPD), lower respiratory tract infections, trachea, bronchi and lung cancers, Alzheimer's disease and other dementias, diarrhea-related diseases, diabetes, and kidney diseases (WHO, 2019). Lifestyle changes are essential to prevent chronic diseases. In order to reduce the risk of developing disease and maintain health, various lifestyle changes such as avoiding smoking, limiting alcohol use, exercising regularly, and adopting healthy eating habits should be implemented. In a study, maintaining healthy lifestyle changes was shown to prolong a healthy lifespan (Nyberg et al., 2020). The most basic recommendations for reducing the risk factors that cause diseases are to avoid smoking, exercise, acquire a healthy and balanced diet, and maintain ideal body weight, blood glucose, blood pressure, and blood lipid levels (Arnett et al., 2019; Piepoli et al., 2016; Türk Kardiyoloji Derneği, 2002; WHO and FAO, 2003). Alcohol consumption and increased sodium intake can play a role in the formation of hypertension by causing an increase in blood pressure (Amalia Pesantes et al., 2017; Costanzo et al., 2010; Erdem et al., 2010; Grimes et al., 2013; Ronksley et al., 2011).

The WHO predicts that smoking causes more than 5 million deaths per year, and if it continues at this rate, it will cause more than 8 million mortality every year by 2030 (WHO 2011). Smoking is known to increase the risk of mortal diseases such as ischemic heart disease, tracheal, bronchial and lung cancers, lower respiratory tract infections, and COPD (Murray & Lopez, 2013). On the other hand, alcohol use is responsible for 5.9% (3.3 million) of all deaths and 5.1% of diseases globally (WHO, 2014). Alcohol use increases the risk of hypertension, cardiovascular diseases (CVDs), liver diseases, acute and chronic pancreatitis, spontaneous abortions, and fetal development issues (Mandeya & Ter Goon, 2019). Smoking and alcohol use are common, especially among university students (Mandeya & Ter Goon, 2019). The reasons for alcohol use include the relatively easy access to alcohol compared to other substances, ignorance regarding the associated harmful effects, the stress of university life, peer pressure, desire to relax, and self-affirmation (Cherian et al., 2014; Dayi et al., 2015). Studies have shown that there is a moderate inverse relationship between students' awareness of the effects of smoking and alcohol abuse on health and their smoking levels, and a moderate relationship between their awareness and alcohol consumption (Abu Shomar et al., 2014; Alves et al., 2020; Hasking & Schofield, 2015). Furthermore, determination of the predictors of alcohol use and smoking is essential to build a healthy environment. The predictors of substance use are diverse and multifactorial. Primarily, social, psychological, and environmental factors can affect these behaviors. Families, friends, and easy access to these substances increase the usage. Expanding the knowledge levels of people might be a good solution for limiting alcohol consumption and making changes in smoking attitudes.

Developing healthy lifestyle habits during university education is important for reducing the risk of chronic diseases in subsequent adulthood. Evaluating the relationship between smoking and alcohol use status of students and determinators of the substance use during the university period is the basis for the development of up-to-date strategies. It has been shown that there is a strong relationship between health literacy and the level of knowledge about chronic diseases (Gazmararian et al., 2003). It has been established that alcohol use and smoking are related to knowledge level and economic status, and they are also affected by environmental factors. However, there is a lack of awareness among young-adult university students about the harmful effects of alcohol use and smoking, as well as their predictors. Due to their educational background, this might have an effect on their behavior regarding substance use. The aim of this study is to evaluate the knowledge level of university students on the harmful effects of smoking and alcohol use on health and determine the predictors of these substances' use.

Material and Methods

Research Design

This cross-sectional and single-centered study was completed with 912 students studying at the faculties of Health Sciences, Engineering and Natural Sciences, Educational Sciences, Social Sciences, Law, and Medicine at İstanbul Medeniyet university. The study was carried out between October 2020 and December 2020. The ethical approval for the study was given by the Social and Human Sciences Research and Publication Ethics Committee of İstanbul Medeniyet University with the decision numbered 2020/39 on 27 October 2020.

Participants

A total of 912 students over the age of 18 studying at the faculties of Health Sciences, Engineering and Natural Sciences, Educational Sciences, Social Sciences, Law, and Medicine at a university participated in the study. Exclusion criteria were being under 18 or over 65 years of age, not giving consent, and not being a university student.

Questionnaire

Informed written consent from the participants was obtained before the study, and then the questionnaire form created by the researchers in light of the literature was distributed. The questionnaire consists of a total of 44 questions under three headings. The first part includes 12 questions about the participant's demographic background (age, department, grade (fifth and sixth grades of medicine faculty were included as the fourth grade), living region, economic status, etc.). The second part includes 16 questions about smoking and alcohol use (alcohol consumption status, frequency of alcohol consumption, smoking status, number of cigarettes consumed daily, family alcohol consumption status, family smoking status, etc.), and the third part includes 16 questions about the level of their knowledge on the effects of smoking and alcohol use on health. In the last part all questions had two answers: "Yes" or "No."

Statistical Analysis

The data obtained from the questionnaires were evaluated using SPSS v.25 (IBM SPSS Corp.; Armonk, NY, USA). Values are presented as mean, SD, and %. The groups were compared using the independent samples *t*-test and chi-square. Prior knowledge about the effects of smoking and alcohol consumption on health was

tested according to the substance use status using logistic regression analysis (binary). To determine the predictors of alcohol use and smoking, multiple regression analysis was used, and models were created with each of the knowledge about harmful effects and answers about alcohol consumption and smoking (family alcohol use/smoking status, having intention to quit smoking, etc.). Differences were considered as significant at $p < .05$ level.

Results

Table 1 presents the demographic data. In the study, 29.1% of the students in the faculties of Health Sciences and Medicine were male, and 70.9% were female; 46.2% of the students from other faculties were male, and 53.8% were female. It was found that the mean age of male students (20.29 ± 1.78) was significantly higher than that of female students (19.98 ± 1.86) ($p < .05$). It was shown that 55.6% of the students in the faculties of Health Sciences and Medicine were women. There was no significant difference between the distribution of the students in their classes. It was determined that 52.2% of the men and 63.6% of the women lived in the Marmara region ($p < .05$); 67.2% of men and 51.0% of women stated that they stayed in student dormitories ($p < .05$). The perceived economic status of the students was found to be moderate for both genders (males: 71.3%, females: 78.5%, $p < .05$).

When alcohol use and smoking status were evaluated, it was found that 50.0% of the other faculties students had tried alcoholic beverages at least one time. This rate was 28.3% in Health Sciences and Medicine, and the difference was statistically significant ($p < .05$). The age for trying alcohol for the first time was 16.49 ± 1.42 years for the Health Sciences and Medical students, and 16.51 ± 1.82 years for the other faculties' students. The majority of the Health Sciences and Medical students did not use alcohol (84.2%, $p < .05$). It was shown that alcohol was used mostly on special days in all faculties (Health Sciences and Medicine: 15.3%, Engineering, Educational Sciences, Social

Table 1.
Demographic Data

	Male (n = 345)		Female (n = 563)		p
Age	20.29 ± 1.78		19.98 ± 1.86		.015*
	%	n	%	n	
Department					
Faculty of Health Sciences and Medicine	37.4	129	55.2	315	<.001*
Faculties of Engineering, Educational Sciences, Social Sciences, and Law	62.6	216	44.8	252	
Grade					
Grade 1	34.2	121	65.8	233	.128
Grade 2	43.0	129	57 .0	171	
Grade 3	35.5	61	64.4	111	
Grade 4	39.5	34	60.5	52	
The region you live in					
Marmara	52.5	181	63.7	361	.002*
Aegean	6.4	22	5.5	31	
Mediterranean	6.1	21	6.9	39	
Eastern Anatolia	11.0	38	4.8	27	
Southeastern Anatolia	11.6	40	7.6	43	
Black Sea	8.1	28	8.0	45	
Central Anatolia	4.3	15	3.7	21	
Where do you live?					
Dormitory	67.2	232	51.0	289	<.001*
Family and relatives	26.4	91	42.3	240	
At home with my friends	2.9	10	5.1	29	
Alone at home	3.5	12	1.6	9	
How do you evaluate your economic situation?					
Good	11.6	58	4.6	88	<.001*
Moderate	71.3	244	78.5	445	
Bad	17.1	40	16.9	25	

Note: *Chi-square, significant at p < .05 level

Sciences, and Law: 23.9%, $p < .05$). When the alcohol consumption status in the family was investigated, families of 85.4% of the Health Sciences and Medical students, and 76.5% of the other faculties students did not use alcohol. The alcohol use of the families of the Health Sciences and Medical students was statistically lower than the families of the other faculties students ($p < .05$). It was determined that 30.8% of the other faculties students and 14.4% of the Health Sciences and Medical students were smoking ($p < .05$). Although the number of smokers was lower in Health and Medicine students, when evaluated in terms of the number of cigarettes consumed daily, it was found that 72.2% of Health Sciences and Medical students, and 61.7% of the students from the other faculties smoked half a pack ($p < .05$). It was shown that 55.0% of the Health Sciences and Medical students, and 62.2% of the other faculties students had smokers in their families ($p < .05$). It was determined that 57% of Health Sciences and Medical students and 50.3% of other faculties' students thought of quitting smoking, and the idea of quitting smoking was more common among Health Sciences and Medical students ($p < .05$) (Table 2).

Table 3 presents the students' level of awareness about the harmful effects of alcohol use and smoking according to their faculty, smoking, and alcohol consumption status. The effects of alcohol

Table 2.
Evaluation of Alcohol Use and Smoking Status of University Students

	Faculty of Health Sciences and Medicine (n = 444)		**Faculties of Engineering, Educational Sciences, Social Sciences, and Law (n = 468)**		***p***
	mean ± SD		mean ± SD		.847
The age of trying alcohol for the first time	16.49 ± 1.42		16.51 ±1.82		
	%	*n*	%	*n*	
Have you tried any alcoholic beverage?					
Yes	28.3	125	50.0	234	<.001*
No	71.8	319	50.0	234	
The alcohol consumption status					
Yes	15.8	70	32.9	154	<.001*
No	84.2	374	67.1	314	
Frequency of alcohol consumption					
Everyday	3.0	4	2.0	4	<.001*
1 – 2 times a week	14.0	17	18.0	37	
1 – 2 times a month	24.5	29	25.7	53	
On special days	57.5	68	54.3	112	
The alcohol consumption in the family					
Yes	14.6	59	23.5	104	<.001*
No	85.4	385	76.5	364	
Do you smoke?					
Yes	14.4	64	30.8	144	<.001*
No	85.6	380	69.2	324	
The number of cigarettes consumed daily					
Half a pack	72.2	43	61.7	89	<.001*
A pack	26.4	17	33.4	48	
Two packs	1.4	1	4.9	7	
Smoking status in the family					
Yes	55.0	244	62.2	291	.027*
No	45.0	200	37.8	177	
Do you think quitting smoking?					
Yes	57.0	40	50.3	74	<.001*
No	43.0	30	49.7	73	

Note: *Chi-square, significant at level $p < .05$.

Table 3.
The Comparison of Different Faculty Students', Smokers', and Alcohol Consumers' Level of Knowledge About the Harmful Effects of Smoking and Alcohol Use

	Faculty of Health Sciences and Medicine (n = 444)	Faculties of Engineering, Educational Sciences, Social Sciences, and Law (n = 468)	p	Smoker (n = 208)	Non-Smoker (n = 688)	p	Alcohol Consumer (n = 224)	Non-Alcohol Consumer (n = 688)	p
Do you know the effects of alcohol on liver?									
Yes	84.5 (375)	82.1 (384)	.333	86.1 (179)	86.6 (596)	.841	90.0 (202)	86.1 (592)	.192
No	15.5 (69)	17.9 (84)		13.9 (29)	13.4 (92)		10.0 (22)	13.9 (96)	
Do you know the effects of alcohol on gastric?									
Yes	72.7 (322)	67.5 (316)	.100	76.4 (159)	72.2 (497)	.255	77.8 (174)	72.4 (498)	.248
No	27.5 (122)	32.5 (152)		23.6 (49)	27.7 (191)		22.2 (50)	27.6 (190)	
Do you know the effects of alcohol on heart?									
Yes	77.7 (345)	69.2 (324)	.004*	74.5 (155)	77.2 (531)	.602	81.5 (183)	75.6 (520)	.092
No	22.3 (99)	30.8 (144)		25.5 (53)	22.8 (157)		18.5 (41)	24.4 (168)	
Do you know the effects of alcohol on blood pressure?									
Yes	74.8 (332)	64.7 (303)	.001*	76.0 (158)	71.9 (495)	.086	79.4 (178)	70.9 (488)	.165
No	24.2 (112)	35.3 (165)		24.0 (50)	28.1 (193)		20.6 (46)	29.1 (200)	
Do you know the effects of alcohol on the nervous system?									
Yes	83.3 (370)	72.4 (339)	<.001*	78.4 (163)	81.8 (563)	.262	82.0 (184)	80.7 (555)	.729
No	16.7 (74)	27.6 (129)		21.6 (45)	18.2 (125)		18.0 (40)	19.3 (133)	
Do you think alcohol consumption is beneficial for health?									
Yes	16.4 (73)	26.7 (125)	<.001*	40.9 (85)	22.5 (155)	<.001*	40.7 (91)	23.7 (163)	<.001*
No	83.6 (371)	73.3 (343)		59.1 (123)	77.5 (533)		59.3 (133)	76.3 (525)	
Is passive smoking harmful to health?									
Yes	97.5 (433)	93.8 (439)	.006*	91.3 (190)	99.0 (681)	<.001*	95.1 (213)	97.7 (672)	.327
No	2.5 (11)	6.2 (29)		8.7 (18)	1.0 (7)		4.9 (11)	2.3 (16)	
Does smoking cause lung cancer?									
Yes	98.4 (434)	94.9 (432)	<.001*	91.8 (191)	98.4 (677)	<.001*	94.5 (212)	97.2 (669)	.199
No	1.6 (10)	5.1 (36)		8.2 (17)	1.6 (11)		5.5 (12)	2.8 (19)	
Does smoking cause laryngeal cancer?									
Yes	98.2 (432)	95.3 (443)	.043*	94.7 (197)	97.4 (670)	.056	96.8 (217)	96.7 (665)	.963
No	1.8 (12)	4.7 (25)		5.3 (11)	2.6 (189)		3.2 (7)	3.3 (23)	
Does smoking cause cardiovascular diseases?									
Yes	98.6 (438)	97.6 (457)	.777	95.7 (199)	98.8 (680)	.003*	96.3 (216)	98.6 (678)	.107
No	1.4 (6)	2.4 (11)		4.3 (9)	1.2 (8)		3.7 (8)	1.4 (10)	
Does smoking cause cerebrovascular diseases									
Yes	96.8 (429)	94.2 (441)	.154	92.3 (192)	96.7 (665)	.007*	93.0 (208)	96.1 (661)	.197
No	3.2 (15)	5.8 (27)		7.7 (16)	3.3 (23)		7.0 (16)	3.9 (27)	
Does smoking cause chronic obstructive pulmonary disease diseases?									
Yes	97.1 (431)	94.2 (441)	.036*	95.2 (198)	97.2 (669)	.099	94.5 (212)	97.2 (669)	.187
No	2.9 (13)	5.8 (27)		4.8 (10)	2.8 (19)		5.5 (12)	2.8 (19)	

Note: *Chi-square, significant at level $p < .05$.

on the heart, blood pressure, and nervous system were known by 77.7%, 74.8%, and 83.3% of Health Sciences and Medical students, respectively, while these rates were 69.2%, 64.7%, and 72.4% for students from other faculties. Accordingly, the level of knowledge about the effect of alcohol on health was statistically higher in Health Sciences and Medical students ($p < .05$). It was found that 83.6% of Health Sciences and Medical students and 73.3% of other faculty students thought that alcohol was harmful. The idea that alcohol is beneficial for health was more common among students from other faculties ($p < .05$). When examining the knowledge level of students on the harmful effects of smoking, the percentages of students who knew about the health risks of passive smoking and that smoking caused lung cancer, larynx cancer, CVDs, cerebrovascular diseases, and chronic obstructive pulmonary diseases were 97.5%, 97.7%, 97.3%, 97.5%, 95.7%, and 97.1% for the Health Sciences and Medical students, respectively. For students from other faculties, these rates are 93.8%, 92.3%, 94.7%, 97.2%, 93.6%, and 94.2%, respectively. It was shown that the knowledge level of the Health Sciences and Medical students about the harmful effects of smoking was higher than that of the students from other faculties, and the difference was statistically significant ($p < .05$). In terms of knowledge about the harmful effects of alcohol on the liver and stomach, as well as the harmful effects of smoking on cardiovascular and cerebrovascular diseases, there were no differences between Health Sciences and Medical students and students from other faculties ($p > .05$). Additionally, it was found that while 22.5% of non-smokers think that alcohol use is beneficial for health, 40.9% of smokers think the same. The difference between the groups were found to be statistically significant ($p < .05$). Furthermore, non-smokers had more awareness about the harmful effects of passive smoking' harmful effects, relation between smoking and lung cancer, CVDs, and cerebrovascular diseases ($p < .05$). When alcohol consumption status and knowledge about harmful effects of smoking and alcohol use were examined, it was shown that 23.7% of non-alcohol consumers think that alcohol is beneficial for health, while this rate was 40.7% among alcohol consumers ($p < .05$).

According to Table 4, the predictors of smoking were determined as department, smoking status of family members, and intention to quit smoking. The other parameters were not a predictor for smoking. Being a student from other faculties, having family and having no intention to quit smoking were predictors for smoking, it was shown that gender was a significant indicator for smokers. There was almost a two-fold difference in smoking status according to gender among all students. Furthermore, men have higher smoking rates. Students from other faculties had 0.4-fold higher rate of smoking. Living in a dormitory increases smoking by 1.5-fold. While smoking in family increases the risk of smoking by 2.9-fold, intention to quit smoking decreases the risk of smoking by 2.3-fold. On the other hand, non-smokers had more knowledge about passive smoking on health than smokers in other faculties. It was found that knowledge about passive smoking's harmful effects decreases the risk of smoking by 3.4-fold. Furthermore, knowing the harmful effects on lung cancer, laryngeal cancer, CVD, cerebrovascular disease, and pulmonary diseases decreases the risk of smoking by 1.1-fold, 0.4-fold, 1.9-fold, 0.5-fold, and two-fold, respectively.

When the association between alcohol use and knowing the effect of alcohol use on health, department, alcohol use in family and thinking that alcohol beneficial for health were found to be predictors of alcohol use. Being a student in other faculties students, alcohol use in family and thinking alcohol is beneficial for health associated with alcohol use. Additionally, alcohol use was affected by gender with a 1.2-fold increase. Living in a dormitory increases the risk of alcohol use 1.4-fold. Most importantly, alcohol use among friends increases the risk of alcohol use 5.4-fold. Knowing the harmful effects on the liver, stomach, heart, blood pressure, and nervous system decreases the risk of alcohol use

Table 4.
Determination the Predictors of Smoking Among University Students

	Smoking			
	B	OR	95% CI for Exp (B)	*P*
Gender	0.359	2.073	0.391 – 5.238	0.588
Department	−1.629	0.374	0.052 – 0.733	**0.015***
Grade	0.449	–	0.891 – 2.758	0.119
Where do you live?	−0.087	1.536	0.242 – 3.472	0.898
Economic status	−0.296	–	0.249 – 2.226	0.597
Smoking status of family	1.881	2.985	1.509 – 28.511	**0.012***
Intention to quit smoking	1.549	2.271	1.653 – 13.399	**0.004***
Does passive smoking harmful to health?	−0.153	3.417	0.335 – 2.196	0.749
Does smoking cause lung cancer?	0.223	1.103	0.066 – 23.695	0.882
Does smoking cause laryngeal cancer?	−2.557	0.430	0.002 – 3.106	0.174
Does smoking cause cardiovascular diseases?	2.068	1.920	0.327 – 191.638	0.203
Does smoking cause cerebrovascular diseases	1.280	0.466	0.311 – 41.532	0.302
Does smoking cause chronic obstructive pulmonary disease diseases?	0.161	2.073	0.514	0.702

Note: *Binary logistic regression, significant at level $p < .05$.

Table 5.
Determination the Predictors of Alcohol Use Among University Students

	Alcohol Use			
	B	OR	95% CI for Exp (B)	*P*
Gender	0.332	1.169	0.973 – 1.997	0.070
Department	−0.576	0.565	0.395 – 0.801	**0.001***
Grade	−0.155	–	0.723 – 1.014	0.072
Where do you live?	0.101	1.396	0.818 – 1.474	0.429
Economic status	0.094	–	0.818 – 1.474	0.533
Alcohol consumption of family	5.989	0.036	184.065 – 864.912	$p < .01$*
Alcohol consumption of friends	0.291	5.403	0.609 – 2.938	0.468
Knowing the effect of alcohol on the liver	0.005	1.299	0.521 – 1.940	0.988
Knowing the effect of alcohol on the gastric	0.166	1.338	0.667 – 2.089	0.569
Knowing the effect of alcohol on the heart	−0.129	1.478	0.621 – 1.245	0.467
Knowing the effect of alcohol on the blood pressure	0.595	1.553	1.044 – 3.147	**0.035***
Knowing the effect of alcohol on the nervous system	−0.239	1.085	0.421 – 1.471	0.453
Thinking beneficial on the health of alcohol	0.742	2.219	1.480 – 2.981	$p < .01$*

Note: *Binary logistic regression, significant at level $p < .05$.

by 1.3-fold, 1.3-fold, 1.5-fold, 1.6-fold, and 1.1-fold, respectively. Thinking that alcohol is beneficial for health increases the risk of alcohol use by 2.2-fold (Table 5).

Discussion

This study investigates the predictors of smoking and alcohol use among university students who were educated in different faculties and their knowledge about harmful effects of smoking and alcohol use. It is found that Health Science and Medicine students' knowledge about harmful effects of smoking and alcohol use is higher than other faculties. While the predictors of smoking were determined as being an other faculties, smoking in the family members who smoke, and having no intention to quit smoking, the predictors of alcohol use were found as being an other faculties, alcohol use in family and thinking alcohol is beneficial for health. This study finding indicate that knowledge about harmful effects of smoking is an important part of substance use and suggest that public health strategies aimed at increasing knowledge levels among university students and their families should be planned to decrease substance use.

It is important to follow lifestyle suggestions such as limiting alcohol use, quitting smoking, eating healthy, increasing physical activity, and maintaining the ideal weight to protect health. For this purpose, the most important step is the implementation of these recommendations by the younger population, and it requires health literacy. In a meta-analysis, it was demonstrated that the effect of lifestyle changes on reducing the risk of CVD among the young was greater than the older individuals (Tsai et al., 2020).

Socioeconomic background and education are very strong predictors, especially for knowing the CVD risk factors (Consoli & Bruckert, 2004). Various studies have shown that the level of knowledge about a disease is proportional to the level of education (Consoli & Bruckert, 2004; Lynch et al., 2006; Potvin et al., 2000). Place of residence, education level, and marital status are also determinants of health and cardiovascular risk factors (Glanz & Bishop, 2010). In a study conducted in India, it was shown that individuals living in rural areas had a lower level of knowledge about CVD risk factors (Krupp et al., 2020). In a systematic review conducted in sub-Saharan Africa about the knowledge, awareness, and perception of the risk of CVD, the level of awareness about the cardiovascular risk factors was low, especially among those living in rural areas with low education levels (Boateng et al., 2017). In this study, it was found that most of the Health Sciences and Medical students and the other faculties students were women. More than half of the Health Sciences and Medical students participating in the study lived in the Marmara region and stayed in dormitories. Many of the other faculties students lived in the Marmara region, and more than half lived in dormitories. This result is connected to the fact that the university where the research was conducted is in the Marmara region. Most of the students lived in İstanbul and the other nearby cities. Regardless of the faculty, it was observed that most of the students participating in the research expressed their economic status as intermediate. The students participating in this study lived in the Marmara region, an urban area, and perceived their economic status as moderate, which created the expectation that their level of knowledge would be high. When the results of the study were examined, the students' level of knowledge was determined to be high, in parallel with this expectation.

The guidelines of the American Heart Association recommend quitting active and passive smoking (Smith et al., 2007). In order to reduce the risk of developing CVD in Türkiye in the future, it is necessary to reduce the number of smokers among the young population. In a study, it was found that 20.1% of university students smoked and had moderate knowledge about the health effects of smoking (Alves et al., 2020). In a study conducted by Abu Shomar et al. (2014), in Palestine, 31.0% of the students smoked, and smokers had less knowledge about the health risks posed by

smoking than non-smokers. In a study conducted with university students in Türkiye, the rate of smoking was found to be 24.8% (Bakar et al., 2013). In a study conducted in 25 universities in 24 countries around the world, the rate of smoking was 13.3% (Peltzer & Pengpid, 2014). Smoking was investigated among university students studying in different faculties in Lebanon and it was determined that the level of smoking among the med students was the lowest with 7.1% and the highest with 20.3% among the students of Life Sciences (Piotr et al., 2019). In a study conducted with the participation of med students in Belgaum, the rate of smoking was found to be 7.2% (Patel et al., 2016). In this study, 14.4% of the Health Sciences and Medical students, and 30.8% of the other faculties students were smokers. The rate of smoking was determined to be lower among the Health Sciences and Medical students. As expected, the level of awareness about smoking and its health effects was higher in faculties concerned with health, due to the higher number of courses taken on health. In this context, it can be argued that the presence of a higher number of courses with health content that include the health effects of smoking might reduce the risk of related diseases.

It was highlighted that the difference in knowledge about harmful effects of smoking and alcohol use with the comparison of smokers vs. non-smokers and alcohol consumers vs. non-consumers is significant. It was found that non-smokers had more awareness about the harmful effects of smoking on CVD, cerebrovascular diseases, lung cancer, and the negative effects of passive smoking. It was also determined that while 22.5% of non-smokers thought that alcohol is beneficial for health, 40.9% of smokers thought the same. Similarly, among alcohol consumers, it is a common belief that alcohol is beneficial for health. Knowledge about harmful effects of smoking and alcohol use has great importance in terms of public health practice. Knowledge directly affects behavior and quitting efforts. Research showed a significant difference between smokers and non-smokers in their awareness of the harmful effects of smoking and passive smoking (Abu Shomar et al., 2014). In contrast, another research has reached opposite results among smokers and non-smokers (Kit et al., 2023). Rosen et al. (2019) determined that smokers tend to underestimate the effects of smoking on health. Similarly, another research reported that many smokers did not know the serious health conditions related to smoking, such as lung cancer and coronary heart disease (Dawood et al., 2016). Our findings have similarities with the literature. Although the study population had a higher educational level, the harmful effects of smoking, especially passive smoking, in relation to CVD and lung cancer, were lesser known among smokers when compared with non-smokers. Additionally, when alcohol users and non-users were evaluated, it was determined that while 23.7% of non-users thought that alcohol is beneficial for health, 40.7% of alcohol users thought the same. Basagoudar et al. (2017) found that 24% of alcohol-consuming students knew that alcohol could lead to cancer, CVD, and liver problems. Sukumaran et al. (2020) highlighted that most consumers drank due to stress and pain, besides not being aware about the harmful effects and underestimate the risk of alcohol consumption. It was indicated that public health practices could be helpful in behavioral changes, especially young adults (Stein et al. 2018). Our findings supported the existing literature. Our study group tended to think that alcohol is beneficial for health. Public health campaigns, educational interventions, and practices aimed at increasing knowledge and awareness about the harmful effects of alcohol and smoking should be planned.

High levels of alcohol use have been found to be associated with a greater risk of hypertension, alcoholic cardiomyopathy, cancer, cerebrovascular events, and dementia. However, several mechanisms have been proposed to explain the benefits of moderate alcohol consumption on heart health, such as an increase in high-density lipoprotein cholesterol, a decrease in plasma viscosity and fibrinogen concentration, an increase in fibrinolysis, a decrease in platelet aggregation, improvement in endothelial function, and a decrease in inflammation and antioxidant effects (Kloner & Rezkalla, 2007). Similarly, England's National Institute for Health and Care Excellence stated that smoking should be stopped, and alcohol intake should be limited. The guidelines emphasized that alcohol intake should be limited to the recommended safe limits determined according to gender, and excessive alcohol consumption should be avoided (Skinner et al., 2007). In their study, Bakar et al. (2013) showed that the rate of alcohol use among university students in Türkiye was 46.3%. In a study conducted at the University of South Africa, the rate of alcohol consumption among students was 58.2% (Mandeya & Ter Goon, 2019). At the end of this study, it was determined that 15.8% of Health Sciences and Medical students and 32.9% of students from other faculties students consumed alcohol. When alcohol use was examined without making any distinction between faculties, it was determined that 27.8% of the students consumed alcohol. Alcohol consumption frequency is increasing, especially on special days. In a study conducted by Dayi et al. (2015), it was found that 76% of drinkers tried alcohol for the first time under the age of 19. In this study, when the participants were asked about the first time they tried alcohol, the average age was determined to be below 17 years, while the rate of alcohol consumption among the students was lower than the rates found in other studies. In a study considering the reasons for alcohol consumption, reasons such as dealing with university stress, easy access to alcoholic beverages, and increasing the feeling of relaxation were suggested (Cherian et al., 2014). Stress and other factors are thought to vary individually, and there may be differences according to cultural factors such as differences in education level and religious beliefs.

In this study, university students' awareness about the health effects of alcohol consumption and smoking was examined according to their faculty and alcohol consumption and smoking status. It was determined that Health Sciences and Medical students were more knowledgeable about the effects of smoking on lung health and the effects of alcohol on the nervous system. A total of 26.7% of students from other faculties students considered alcohol beneficial. This idea was found to translate into a 10% increase in the consumption of alcohol. Being educated in Health Sciences and Medicine was found to increase awareness of health-related issues and limit the use of various addictive substances. On the contrary, it was shown in a study that a high level of knowledge caused higher alcohol consumption (Hasking & Schofield, 2015). In line with the findings of this study, it was observed that the level of knowledge of Health Sciences and Medical students was higher than those studying in other faculties such as Engineering, Educational Sciences, Social Sciences, and Law.

In this study department, smoking in the family and having the intention to quit smoking were determined as predictors of smoking. In the literature, predictors of smoking are multifaceted and categorized according to psychological, social, and demographic factors. One of the most important psychological predictors was the intention to smoke. Vitória et al. (2011) showed that the intention to smoke was a significant predictor of smoking, especially among adolescents. Similarly, another study showed that having positive attitudes towards smoking, and having most friends who were current smokers, were significantly associated with smoking intentions (Su et al., 2015). Another study demonstrated that the relationship between the social environment and smoking was closely related. It was indicated that having friends with smoking behaviors was a good predictor of smoking status, especially among adolescents (Tjora et al., 2011). Additionally, parental modeling of smoking behavior has been shown to influence children's smoking habits (Cosci et al., 2023). Our findings align with the literature. It is noted that smoking is associated with the social environment and knowledge level. To decrease the intention of smoking, the harmful effects of smoking should be implicated in educational strategies. Personal health knowledge should be increased with practices.

The predictors of alcohol use were determined as department, alcohol consumption in the family, and thinking alcohol is beneficial for health in this study. Similar to smoking, predictors of alcohol use are diverse and shaped around social, psychological, and environmental factors. Cooke et al. (2017) indicated that familial and social environments have a strong impact on drinking behavior among university students. Another study found that negative attitudes towards alcohol use lead to changes in drinking behaviors. It was shown that disapproval by family was related to lower consumption of alcoholic beverages (Hausheer et al. 2016). Moreover, health literacy is related to alcohol consumption behavior. Rolová et al. (2021) found lower health literacy associated with daily and binge drinking. Our findings show similarities with the literature. Enhancing health literacy with educational strategies might be a reasonable implementation for decreasing alcohol use. Public health strategies that target increased knowledge and awareness about the harmful effects of alcohol use, as well as educational and interventional practices, might be helpful in limiting alcohol consumption. Additionally, multifaceted practices should be planned that include behavioral changes regarding alcohol and smoking by increasing the knowledge and awareness of families.

One of the limitations of the study is that it was a cross-sectional study conducted in a single center. Larger-scale studies involving more universities are required for a better analysis. The questions used in the study were prepared by the researchers. Data were evaluated using categorical data instead of a scoring system. One of the strengths of this study is that it was conducted on 912 university students and the knowledge and predictors of smoking and alcohol use on health were investigated.

The harmful effects of smoking and alcohol use is well-known. Although the consumption of alcohol was observed to be moderate among students, the state of being knowledgeable about the harmful effects of smoking and alcohol consumption varied according to students' faculties. Health Sciences and Medical students had higher knowledge levels when compared with other faculties. Including courses on the harmful effects of smoking and alcohol consumption in the university curriculum and developing the necessary health policies would be beneficial in terms of reducing the risk of the development of chronic diseases and improving their knowledge. Additionally, the predictors of smoking and alcohol use were shaped around department, family alcohol use/smoking status, having the intention to quit smoking and thinking alcohol is beneficial for health. Public health strategies should be planned for both families and students, and it should be target increase knowledge about harmful effects of smoking.

Data Availability Statement: The data that support the findings of this study are available from the corresponding author, upon reasonable request.

Ethics Committee Approval: This study has ethical approval which was given by the Social and Human Sciences Research and Publication Ethics Committee of İstanbul Medeniyet University with the decision number 2020/39 on October 27, 2020.

Informed Consent: Written informed consent was obtained from participants who agreed to take part in the study.

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