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Personal and social factors as a determinate of adolescent smoking

Ali Cissey Usman[a], Sefa Bulut[a], and Mehmet Kaplan[b]

[a]Guidance and Counseling, Ibn Haldun University, Istanbul, Turkey; [b]Institutional Research, New Jersey Institute of Technology, Newark, New Jersey, USA

ABSTRACT

Background: Personal and social difficulties are key contributors to smoking during adolescence. This study examined personal and social factors that influence adolescent smoking. In all the study examined gender, perception of academic success, relationship between students' teaching-students relationship, and adolescent smoking.

Method: Data used for this study are a portion of a large cross-sectional archival survey data titled "A questionnaire for high-school students on cigarette-alcohol-substance use" that was collected in 2018 among three high-school types (Anadolu High School, Imam Hatip High School, and Vocation high school) in Bagcilar, Istanbul. We examined the association between personal factors, social factors, and adolescent smoking by using the Spearman correlation and chi-square test of independence.

Findings: Of all the variables irrespective of the influence of school types, the results found a link between negative perception of academic success, teacher–student relationships, peer relationships, and gender on adolescent smoking. More specifically, a negative perception of academic success was found to influence adolescent smoking in vocational high schools, while teacher–student relationships, and gender were found to influence adolescent smoking in Imam Hatip high schools. The only variable that was found to influence adolescent smoking in Anadolu high schools was peer relationship pressures.

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Introduction

Even though smoking is banned in government offices, workplaces, restaurants, bars, cafes, schools, hospitals, shopping malls, and in all forms of public transportation in Turkey (Işıtmangil et al., 2017), the expression: "To smoke like a Turk" attests to the fact that smoking is a habit that is still common among most Turkish people. According to the Turkey Global Adult Tobacco Survey (GATS 2016) reports, overall, 31.6% (44.1% male, 19.2% female) of the general population of Turkey are current smokers. Whereas the Turkey Global Youth Tobacco Survey (GYTS) report in 2017 suggests that among adolescents aged 13–15, 17.9% (boys 23.2%; girls 12.1%) are current tobacco users, along with 7.7% (boys 9.9%; girls 5.3%) current cigarettes smoker.

This has therefore made the Tobacco epidemic one of the most important public health problems in the country. For example, in 2011, 30% and 6% of all deaths in Turkey are associated with cigarette smoking in men and women, respectively (Tobacco Atlas, 2011). In other reports, it is believed that smoking is responsible for more than a quarter of all deaths (Bilir et al., 2009). The principal reason is that smoking is associated with multiple health problems. For example, lung cancer has been confirmed over 50 years ago to be caused by cigarette smoking, as well as tracheal diseases, bronchus diseases, heart diseases, diabetes, tuberculosis, immune system problems, and chronic obstructive pulmonary disease (US Department of Health and Human Services, 2004).

Therefore, identifying the drive that fosters the adaptation of smoking behaviors among adolescents in Turkey remains a public health priority. This is because, in most cases, smoking at a young age is believed to be linked with more cigarette smoking during adulthood. The aim and objectives of this study hold the view that it seems more responsible to prevent or delay the onset of smoking by investigating personal and social factors and drives that instigate adolescent smoking in order to address the growing concern about smoking in Turkey. Moreover, it complements the most recent findings on adolescent smoking that linked smoking among high-school students in Turkey to certain key family factors (Usman et al., 2022). This is equally important because adolescent smoking is a developmental phenomenon that is influenced by personal, social, and family factors.

Literature review

In many European countries today, many current and former smokers started smoking before the age of 18 (Filippidis et al., 2015). But on average, it is viewed that regular smoking starts around 15.8–18.8 years (Filippidis et al., 2015). However, going by the 2015 ESPAD report, more than one-fifth of all adolescents in Europe smoked before the age of 13. In Turkey, reports show that about 75% of all current smokers started smoking before their 20th birthday (Cetinkaya & Marquez, 2017). It is equally believed that adolescents between the ages of 15–19 are the most vulnerable for they account for nearly 48% of early smokers in the country (Cetinkaya & Marquez, 2017). Also, the belief is that one in every four smokers in

CONTACT Ali Cissey Usman aliseesay@gmail.com Guidance and Counseling, Ibn Haldun University, Istanbul, Turkey
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Turkey attempted to smoke between the ages of 10–14 (Cetinkaya & Marquez, 2017).

On gender and sex grounds, the same report suggested that before the age of 14, boys are more likely to smoke than girls, whereas, after 14, more girls are at risk of smoking compared to boys. In line with some of these reports, the Turkish health statistics yearbook of 2016 to a larger extent also attests to the above findings (Berrak et al., 2016).

As a result of these trends over the years, a wide range of possible drives and risk factors have been studied in numerous studies both locally and internationally to continuously understand why adolescents smoke. By and large, most of these studies attempt to classify adolescent smoking as a behavior that is driven by a development phenomenon characterized by personal and social factors (e.g., Leonardi-Bee et al., 2011). Personal factors are subjective to individual factors. On such factors, more emphasis has been placed on the role of subjective adolescent perceptions of health-related consequences of smoking and how it deters smoking (Amrock & Weitzman, 2015). Others have also focused on the adolescent beliefs surrounding smoking (Rodriguez et al., 2007), school truancy (Yu et al., 2010), and gender and age (Babaoglu et al., 2017).

However, on social factors, the debates have centered around adolescents smoking in groups as the widely cited risk factors that influence smoking (Hoffman et al., 2006). To be precise, it is believed that an adolescent is more likely to smoke when he or she has many friends who smoke (Joung et al., 2016; Scalici & Schulz, 2017).

Examining the influences of the above personal factors among others as factors that influence or predict adolescent smoking in Turkey, studies suggest that good academic performance and a good social environment are important factors that deter adolescents from smoking (Ozge et al., 2006). On whether there are some forms of significant disparities in the availability of social support systems among high-school types in Turkey, it was reported that students from Vocational high schools perceive higher teachers' social support compared to those from school types such as Anadolu and Imam Hatip high schools (Mengi, 2011). Contrary to that, the study of Uyan (2014) seems to find higher perceived social support systems among students in Anatolian high schools compared to others.

Regardless of these discrepancies, it is of great importance to note that the consequences of lack of social and personal support, especially on the part of weaker students, could lead to such students clustering together to perform deviant acts such as smoking. And if that is the case, it is proposed that academic success, quality of peer relationships, and teacher–student relationships are risk factors worth investigating among Turkish high schools. But with an attempt to control the influence of school types with the justification that different schools have different school cultures and norms, and these cultures and norms play significant roles in shaping and modeling the behaviors of students.

Material and methods

Data used for this study are a portion of a large cross-sectional archival survey data titled *"A questionnaire for high school students on cigarette-alcohol-substance use"* that was collected in 2018 among three high-school types in Bagcilar, Istanbul. In determining the district from which to collect data, the researchers used purposive sampling to define their district of interest. Bağcılar, Istanbul was chosen because of the demographic characteristics of the district. First, it is regarded as one of the most prominent districts in Istanbul, and second, the district is regarded as the third-highest populated district in Istanbul. Lastly, based on the fact that previous studies suggest that cigarette smoking is common in Bağcılar (Evcin, 2014).

After determining the district of data collection, all other procedures of data collection such as school selection and participants were based on random selection, and these processes were ethically approved by the Bagcılar Guidance Research Center and the Ibn Haldun University Department of Guidance and Counseling. The purpose of the data collection was to measure the prevalence of cigarette, alcohol, and other substance use among high-school students in Bagcilar. Before data collection, parental consent forms were sent for approval in collecting smoking and other substance use data from students.

Data were collected on socio-demographic information, students smoking status, parents' level of education, occupation and household income, smoking, alcohol and other substance use habit of parents and siblings, student–parent relationship, students' perception of their academic performance, peer relationships, student–teacher relationship, etc. Moreover, the process was highly confidential as only two researchers were present in the classrooms for students to complete the questionnaires, and student participation was made voluntarily.

Variable definition

From Table 1, variables are classified as dependent, independent, and control variables. Smoking status (yes, no, or stopped) was considered the dependent variable. Whereas negative perceptions of academic success, gender, teacher–student relationship, and peer pressure constituted the independent variables. Also, school type was treated as a control variable. This is because it is hypothesized that a relative relationship exists between negative perceptions of academic success, teacher–student relationships, peer pressure, and school type.

Table 1. Variable definitions.

Variables	Variable Classification	Definition	Measurement
Perception of academic success	Independent	How an adolescent perceived his or her academic success	Self-report survey questionnaire
Teacher–student relationship	Independent	How a student get along with his or her teachers	Self-report survey questionnaire
Peer pressure	Independent	How a student get along with his or her friends in school	Self-report survey questionnaire
Gender	Independent	Male and female	Self-report survey questionnaire
Smoking Status	Dependent	Whether currently smoking, stopped or never smoked	Self-report survey questionnaire
School Type	Control	Anadolu, Imam Hatip or Vacational School	Self-report survey questionnaire

Statistical analyses

All analyses of data were performed using SPSS version 26. Demographic data were expressed as frequency and percentage. For data analyses, Spearman correlation, and cross-tabulation tests were performed. Spearman correlation was used to measure the relationship between variables. Whereas the cross-tabulation was used to compare variables by showing classes of one variable as rows and the others as columns. Both analyses were preferred because the data that are of interest to this research were not normally distributed. A p-value of less than .05 was considered to represent statistical significance.

Results

Demographic data

In total, the sample has 751 counts. From the total count of 751, 358 (47.7%) were male and 393 (52.3%) were female. On the distribution of the sample based on school type, 251 (33.4%) were students from Anadolu High School, 108 (14.4%) from Imam Hatip High School, and 392 (52.2%) from Vocational High School. In those schools, 159 (21.2%) were current smokers, 49 (6.5%) were former smokers (stopped) and 543 (72.3%) have never smoked. This low number of smokers in the study area may be a result of the fact that individuals turn to modify aspects of their behavior upon the awareness of being observed (McCarney et al., 2007). With regard to the residents' distribution of respondents, a large portion of them were residents of Bağcılar 553 (73.6%), and 198 (26.4%) were residents of districts outside Bağcılar. On age distribution, 9 (1.2%) were 17 years, 562 (74.8%) were 18 years, 154 (20.5%) were 19 years, and 26 (3.5%) were 20 years.

Variable correlations

From the Spearman correlation coefficient below Table 2 in determining the correlation between variables of interest to the aims and objectives of the study, results suggest that:

(1) At $p < .05$, a negative significant relationship was found between students' perception of academic success and smoking.
(2) At $p < .05$, a negative significant relationship was found between teacher–student relationship and smoking.
(3) At $p < .05$, a positive significant relationship was found between peer pressure and smoking.
(4) At $p < .05$, no significant relationship was found between gender and smoking.

Chi-square test of independence

Perception of academic success * smoking

Table 3 on the negative perception of academic success and smoking based on school type shows that:

1. At $p < .05$, no significant relationship was found between the perception of academic success and smoking in both Anadolu and Imam Hatip high schools. However, a significant relationship was found in those variables in vocational high school.

Table 2. Nonparametric correlation between variables.

Spearman's rho	School type	Smoking Status	Perception of academic success	Peer-relationships	Teacher–Student relationships	Gender
School Type	1					
Smoking Status	−.010	1				
Perception of academic success	−.014	−.096**	1			
Peer-relationships	−.040	.094**	.181**	1		
Teacher–Student relationships	.011	−.134**	.211**	.250**	1	
Gender	−.018	−.071	.049	.010	.135**	1

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

Table 3. Perception of academic success * smoking.

Chi-Square Tests				
School Type		Value	df	Asymptotic Significance (2-sided)
Anadolu	Pearson Chi-Square	8.570[b]	8	.380 $p > .05$
	Likelihood Ratio	9.416	8	.308
	Linear-by-Linear Association	2.248	1	.134
	N of Valid Cases	251		
Imam Hatip	Pearson Chi-Square	11.028[c]	8	.200 $p > .05$
	Likelihood Ratio	9.887	8	.273
	Linear-by-Linear Association	2.132	1	.144
	N of Valid Cases	108		
Vocational high school	Pearson Chi-Square	21.483[d]	8	.006** $p < .05$
	Likelihood Ratio	20.747	8	.008
	Linear-by-Linear Association	2.481	1	.115
	N of Valid Cases	392		
Total	Pearson Chi-Square	21.335[a]	8	.006** $p < .05$
	Likelihood Ratio	20.343	8	.009
	Linear-by-Linear Association	6.593	1	.010
	N of Valid Cases	751		

**Correlation is significant at the 0.01 level (2-tailed).

*Negative teacher–student relationship * smoking*

Table 4 on negative teacher–student relationship and smoking shows that:

(1) At $p < .05$, no significant relationship was observed between negative teacher–student relationships and smoking in both Anadolu and Vocational high schools.
(2) However, a significant relationship was observed between negative teacher–student relationships and smoking in Imam Hatip high school.

*Negative adolescent peer relationships * smoking*

Result of negative adolescent peer relationships and smoking from Table 5 shows that:

(1) At $p < .05$, no significant relationship was found between negative adolescent peer relationships and smoking in both Imam Hatip and Vocational high school.
(2) However, a significant relationship was found between negative adolescent peer relationships and smoking in Anadolu high school.

*Gender * smoking*

From Table 6, the result on the relationship between gender and smoking shows that:

(1) At $p < .05$, no significant relationship was found between gender and smoking in both Anadolu and Vocational high schools.
(2) However, a significant relationship was found between gender and smoking in Imam Hatip high school.

Discussion

In many societies, adolescence has always been a difficult period in the life of parents because it is a period when their children are more vulnerable to substance use and other

Table 4. Negative teacher–student relationship * smoking.

Chi-Square Tests				
School Type		Value	df	Asymptotic Significance (2-sided)
Anadolu	Pearson Chi-Square	8.628[b]	8	.375 $p > .05$
	Likelihood Ratio	8.172	8	.417
	Linear-by-Linear Association	5.649	1	.017
	N of Valid Cases	251		
Imam Hatip	Pearson Chi-Square	28.241[c]	8	.000** $p < .05$
	Likelihood Ratio	25.815	8	.001
	Linear-by-Linear Association	4.059	1	.044
	N of Valid Cases	108		
Vocational high school	Pearson Chi-Square	12.197[d]	8	.143 $p > .05$
	Likelihood Ratio	12.162	8	.144
	Linear-by-Linear Association	4.106	1	.043
	N of Valid Cases	392		
Total	Pearson Chi-Square	26.036[a]	8	.001** $p < .05$
	Likelihood Ratio	25.363	8	.001
	Linear-by-Linear Association	12.636	1	.000
	N of Valid Cases	751		

**Correlation is significant at the 0.01 level (2-tailed).

Table 5. Negative adolescent peer relationship * smoking.

Chi-Square Tests				
School Type		Value	df	Asymptotic Significance (2-sided)
Anadolu	Pearson Chi-Square	19.284[b]	8	.013* $p < .05$
	Likelihood Ratio	13.851	8	.086
	Linear-by-Linear Association	4.416	1	.036
	N of Valid Cases	251		
Imam Hatip	Pearson Chi-Square	6.632[c]	8	.577 $p > .05$
	Likelihood Ratio	8.326	8	.402
	Linear-by-Linear Association	2.380	1	.123
	N of Valid Cases	108		
Vocational high school	Pearson Chi-Square	5.587[d]	8	.693 $p > .05$
	Likelihood Ratio	8.652	8	.373
	Linear-by-Linear Association	2.265	1	.132
	N of Valid Cases	392		
Total	Pearson Chi-Square	15.614[a]	8	.048* $p < .05$
	Likelihood Ratio	19.215	8	.014
	Linear-by-Linear Association	8.083	1	.004
	N of Valid Cases	751		

*Correlation is significant at the 0.05 level (2-tailed).

Table 6. Gender * smoking.

Chi-Square Tests				
School Type		Value	df	Asymptotic Significance (2-sided)
Anadolu	Pearson Chi-Square	3.263[b]	2	.196 $p > .05$
	Likelihood Ratio	3.266	2	.195
	Linear-by-Linear Association	1.290	1	.256
	N of Valid Cases	251		
Imam Hatip	Pearson Chi-Square	12.963[c]	2	.002** $p < .05$
	Likelihood Ratio	14.617	2	.001
	Linear-by-Linear Association	6.159	1	.013
	N of Valid Cases	108		
Vocational high school	Pearson Chi-Square	.344[d]	2	.842 $p > .05$
	Likelihood Ratio	.343	2	.842
	Linear-by-Linear Association	.198	1	.656
	N of Valid Cases	392		
Total	Pearson Chi-Square	7.162[a]	2	.028* $p < .05$
	Likelihood Ratio	7.165	2	.028
	Linear-by-Linear Association	3.293	1	.070
	N of Valid Cases	751		

**Correlation is significant at the 0.01 level (2-tailed).*Correlation is significant at the 0.05 level (2-tailed).

delinquent behaviors (Bulut et al., 2020). This study examined personal and social factors that influence adolescent smoking among high-school students in Bagcilar, Istanbul.

On personal factors, generally, a negative relationship was found between negative perception of academic success and adolescent smoking. This means that the percentage of adolescent smoking is more likely to increase, or adolescents are more prone to smoke substantially once they perceive themselves as struggling academically and vice versa. Comparing this finding to other studies in recent times in Turkey, the study of KaraçKaraçAm and Totan (2014), opined that academic performance is a core factor that lessens adolescent smoking. Similarly, in a study with Ahi Evran University students in Kirsehir, the finding suggested that weak academic-performing students have higher tendencies to smoke more compared to high academic-performing students Babaoglu et al. (2017).

As to whether different school cultures play important roles in adolescent smoking, the finding on the negative perception of academic success and adolescent smoking shows that a relationship exists between the two variables in Vocational high schools but not in Anadolu and Imam Hatip high schools. This indicates that those adolescents in Vocational high schools have higher tendencies to smoke because of their perceived academic success compared to adolescents in Anadolu and Imam Hatip high schools. With this, it demonstrates how school conditions such as curriculum, school structures and norms, and grading of schools in terms of academic performance influence students smoking behaviors. In line with this finding, Akkuş et al. (2017) study in Duzce also found the prevalence of smoking to be higher among vocational high schools compared to those of Anadolu high schools.

As to whether there is a relationship between the quality of teacher–student relationships and adolescent smoking, the results of this study found a relationship between teacher-student relationships and adolescent smoking. This means students with positive, close, and supportive relationships with their teachers are more likely to outperform those with conflicting and struggling relationships. The results of those with conflicting and struggling relationships may be to cluster in groups and engage in smoking or other deviant behaviors. Such a possibility has been reported among high-school students in Trabzon, as students were encouraged to develop and maintain better relationships with their parents and teachers to shield them against smoking at an early age (Can et al., 2009).

Within the current study to understand whether the influence of teacher–student relationships and adolescent smoking defer on school types, it was found that teacher–school relationship is more likely to influence adolescent smoking in Imam Hatip high schools than in Anadolu and Vocational high schools. The most plausible explanation for this result in Imam Hatip high schools may result from the fact that being a religious-centered high school, students may be expected from religious teaching to meet their teachers' academic, emotional and spiritual expectations. A reflection of this has been reported in a study as students from other types of high schools were found to perceive higher teacher social support systems compared to those in Imam Hatip (Mengi, 2011). Besides, Uyan (2014) also reported a similar finding as teachers to students' social support systems were found to be present in Anadolu high school compared to Imam Hatip high school. To further bolster this point, a qualitative study finding among high-school students in Istanbul opined that the most expectations of students of Imam Hatip are to receive unconditional emotional support from teachers (Ahmet, 2020).

In addition to the aforementioned factors and adolescent smoking, the current study also found a link between negative adolescent relationships and adolescent smoking. Most often, peer factors that influence adolescent smoking include peer relationship expectations, struggling to get along in adolescents' group, and other close adolescent smoking habits. For that reason, the finding of this study further supports and cements other previous studies within and outside Turkey that found a relationship between peer relationships and adolescent smoking. In one of such study in Turkey, Semerci et al. (2018) reported a link between adolescents' perceived social competence and smoking in Edirne. In the same vein, it was also reported that among Turkish university students, smoking

is often a reflection of the feeling of insecurity, loneliness, or anger because of peer social relationship stress and struggles (KaraçKaraçAm & Totan, 2014).

As to if negative adolescents' relationship influences smoking differently based on school type, the study discovered that negative adolescent relationships influence adolescent smoking in Anadolu high school but not in Imam Hatip and Vocational high school. The possible reason for this outcome may be due to the characteristics and academic competition among students in Anadolu high school as the school is often considered to be the best. In this direction, the general perception in Turkey is that Anadolu high schools are mostly preferred by successful and brilliant students (Demir, 2017). As such, there are high possibilities of constant academic competition among students and the possibility of substance abuse because of psychological bullying in instances where competitions are unhealthy. On those grounds, the 2018 International Student Assessment (PISA) program reported that students in Anadolu and vocational high schools are more prone to be bullied than students in other school types (Ölmez, 2021).

Concerning gender, past studies in Turkey have supported that gender is a predictor of adolescent smoking (e.g: Babaoglu et al., 2017). Whereas in determining the influence of gender on smoking habits in Eyup Istanbul, it was discovered that smoking was higher among boys than girls (Talay & Altin, 2008). In all these studies, boys were reported to smoke or tend to smoke more than girls. The findings of this study on gender also align with past studies in Turkey on gender and smoking. In the types of high schools examined in this study, findings found a significant influence of gender on adolescent smoking in Imam Hatip high school but not in Anadolu high and Vocational high schools.

However, this finding contradicts past findings on the influence of gender and adolescent smoking as gender was found to influence adolescent smoking in vocational school compared to Anadolu and Imam Hatip high school (Talay & Altin, 2008).

Conclusion

In sum, this study examined the association between personal factors and social factors and how they influence adolescent smoking. This study demonstrated the merit of examining factors that influence smoking with respect to individual adolescents' school structures and norms. This is because we found evidence to suggest a direct impact of the individual school environments and how they influence adolescent smoking. Linking this to previous studies, school authorities and other key decision-makers in the educational sector need to come up with interventions that address different factors that influence adolescent smoking in different schools.

Perhaps, these interventions would have the potential of solidifying the adolescent antismoking norms that Turkey aims to achieve in the nearest future. But if nothing is done and the prevalence of adolescent smoking keeps increasing at its current rate, it will become impossible for these adolescent smokers to stop once they become adults. This is because smoking is addictive and this impels smokers to continue smoking.

Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Ali Cissey Usman http://orcid.org/0000-0002-4578-6655

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