

# *Fighting Against Cigarette Smoking Among Medical Students: A Success Story*

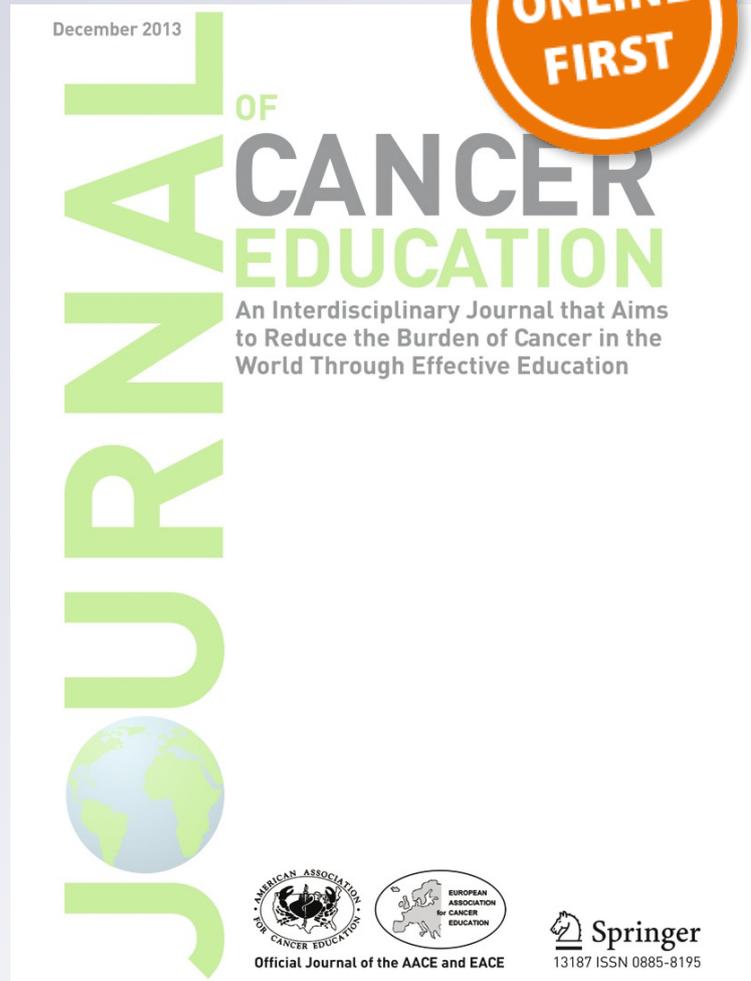
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# Fighting Against Cigarette Smoking Among Medical Students: A Success Story

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**Abstract** A survey in the year 2007 among medical students of Ankara University Medical School to assess the smoking rates showed that 25.1 % of them were smoking. Moreover, the smoking rate was 35 % at sixth grade students and 60 % of the smokers specified that they started smoking at medical school. This report provides a successful approach to decrease smoking among medical students by measures against starting smoking. An “Antismoking Group” composed of voluntary academic staff, nurses, students, psychologists, and a social worker of the medical school was established to engage in lowering the smoking rate and eliminating it eventually among our students. Several methods including regular monthly meetings, annual “Smoking or Health” symposiums, and

lectures to first, second, and third grade students to increase their awareness related to harms of smoking and their role in the fight against smoking were carried out. Our surveys in the years 2009 (641 students) and 2012 (975 students) showed that total smoking rates dropped to 15.0 and 11.0 %, respectively ( $p < 0.0002$ ). Moreover, the smoking rate for the sixth grade students dropped from 35.0 % in 2007 to 21.8 and 8.8 % in the years 2009 and 2012, respectively ( $p < 0.0002$ ). In 2012, the smoking rates of first year and sixth year students were 7.8 and 9.0 %, respectively. These close rates of smoking at the first and last years of medical school training and the significant drop in smoking rates in 5 years confirm that our group pursued a realistic and successful strategy against smoking.

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**Keywords** Smoking · Anti-smoking campaign · Medical students

## Background

Physicians are important role models in the society regarding common health and disease prevention. They also have an important role in the fight against smoking in the community. Therefore, being aware of the health hazards of cigarette smoking, physicians should not smoke. However, smoking rates among medical students and physicians in Turkey has been high, like those in many other countries in the world [1–8]. Smoking prevalence among physicians was reported between 32.6 and 66.2 % in several studies in Turkey before the year 2003 [7].

Our cross-sectional survey of 229 students at fourth, fifth, and sixth years of medical school in 2007 showed that 25.1 % of them were current smokers, and 60.0 % started smoking at medical school. Higher rates of smokers had smoking family members and friends when compared to nonsmoker students (66.0 vs. 38.0 %;  $p < 0.01$  and 91.5 vs. 56.0 %;  $p < 0.01$ ). This report includes activities of “Antismoking Group” of Ankara University Medical School established in 2007, aiming to lower the smoking rate and to eliminate it eventually among our medical students, and results of this endeavor in the last 5 years.

## Materials and Methods

This is a descriptive study based on three surveys related to smoking habits of medical school students in the years 2007, 2009, and 2012. The surveys included questions related to smoking status, age of starting smoking, number of smoked cigarettes per day, smoker family members and friends, parents' education, income of the families, types of residences, alcohol consumption and drug addiction, desire and attempts for smoking cessation, and demand for help to stop smoking.

First survey in the year 2007 included 229 students from fourth, fifth, and sixth grades of Ankara University Medical School by random sampling, which composed 25.4 % of all the students. Following this survey, a committee was formed under the title of “Antismoking Group of Ankara University Medical School” composed of voluntary faculty, residents, medical students, nurses, and other hospital workers to fight against smoking in medical school students and nurses.

Antismoking Group convened every last Thursday of each month at 11 a.m. since the year 2007 to discuss the status of smoking among medical students and other staff and to review the strategies against smoking. Anticipating that smoking cessation is difficult and frustrating most of the time, our primary goal was to prevent medical students to start smoking

by educating them regarding the harms of smoking and by emphasizing physicians' responsibilities to protect health in the society. In every occasion, they were told that “physicians are important role models in the society, and therefore, they should not smoke for an effective fight against smoking in their community.”

Knowing that majority of the new smokers in medical school start smoking in the first 3 years of medical education, “Smoking or Health” lectures at the beginning of each academic year were given each year by three senior faculty members to the first, second, and third year medical students. Information pertinent to epidemiology of smoking, morbidity and mortality related to active and passive smoking in children and adults and physicians role, and responsibility in the prevention of diseases caused by smoking with pictures of patients were conveyed in these lectures.

Also annual “Smoking or Health” symposiums were carried out each year at the medical school during the first week of April which was designated as the “Cancer Week” by the Ministry of Health. The themes of the symposiums were as follows:

- 2008: Harms of Smoking on Health
- 2009: Quitting Smoking
- 2010: Woman and Smoking
- 2011: Children and Smoking
- 2012: Smokeless University

Meetings of the faculty with the students at dormitories were arranged 2–3 times each year. During these interactive post-dinner talks, harms of smoking, emphasizing physicians' role in smoking cessation programs, and ways of quitting were discussed.

Other occasional activities were as follows:

- Conferences to the students with food and drinks supplied by the group
- Placing banners at cafes and restaurants in the medical school campus and hospitals concerning harms of smoking
- A parade of faculty and students at the university campus with T-shirts and banners against smoking

Furthermore, a smoking cessation clinic for students and staff was established by the university administration.

Legislation against the harms of tobacco product by the Turkish Parliament which took full effect in 2009 also facilitated our goal. The legislation brought prohibition of smoking in all enclosed places, mandatory warnings and pictures on cigarette packages, and mandatory regular programs on all TV channels about the harms of smoking.

Two more cross-sectional surveys were done in the years 2009 and 2012 to evaluate the changes in smoking attitudes of our medical students following these activities of “Antismoking Group.” The questions were similar to those prepared in 2007.

In 2009, all medical students from first, third, and sixth grades of medical school were asked to participate in the smoking survey and 641 students (69.1 %) completed the questionnaire. In 2012, all 1,737 students from six grades of medical school were invited and 975 (56 %) completed the questionnaire.

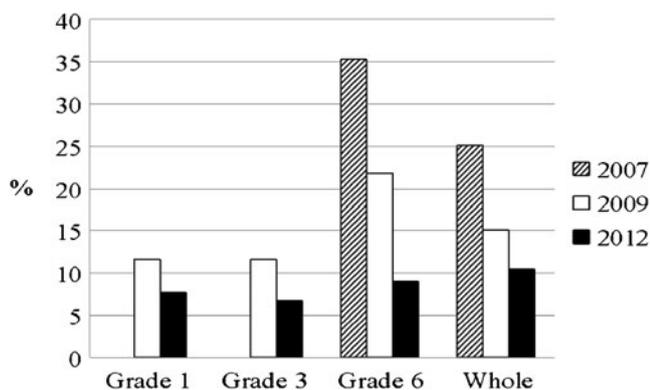
Descriptive data analysis was done using SPSS 15 software. Dichotomous variables were compared by  $\chi^2$  test, and homogeneity of variance was tested by using one-way ANOVA.

### Results

The survey in 2009 showed that the smoking rate was down to 15.0 from 25.1 % in 2007 (Fig. 1). The total smoking rate declined to 10.4 % in 2012. While the smoking rate of sixth grade students was almost twice as high as those in the first grade in 2009 (21.8 vs. 11.6 %), there was relatively slight difference of these rates in 2012 (7.8 vs. 9.0 %) (Fig. 1). The decline in smoking rates of the whole group and also the sixth grade students in 5 years were highly significant ( $p < 0.0002$  and  $p < 0.0001$ ).

The change in smoking rates in 5 years was more striking in female students compared to males (22.6 vs. 3.9 %;  $p < 0.0001$ ) (Table 2). There was no significant change in the rates of quitters in 5 years to account for the drop in smoking rates (Table 1). Likewise, no significant change was observed in ages of starting smoking, number of cigarettes smoked per day, educational status of the parents, and rates of smokers in the families (Tables 1 and 2).

Though there was a significant increase in the rate of high school educated fathers in 2012, it was wiped out by a significant decrease in the rate of those with university degree in 2012 (Table 1). In the 2012 survey, while smoker family member rate was 40.9 % for nonsmoker students, it was



**Fig. 1** Smoking rates of the students at first, third, and sixth grades of Ankara University Medical School

**Table 1** Changes in characteristics of all medical students

	2007 (%)	2012 (%)	P
Quitted smoking	14.4	11.0	>0.05
Smokers in the family	46.5	43.5	>0.05
Mother's education			
High school	30.1	33.7	0.292
University	46.2	44.1	0.606
Father's education			
High school	17.1	25.4	0.018
University	71.1	63.3	0.029

70.3 % for smoker students ( $p \leq 0.001$ ). Likewise, while the rate of smoker friends of nonsmoker students was 66.7 %, it was 97.4 % for smoker students ( $p \leq 0.001$ ).

The rates of smokers who wanted to quit smoking were 46.3, 65.0, and 54.3 % in the years 2007, 2009, and 2012, respectively.

### Discussion

World Health Organization announced smoking tobacco as the leading cause of preventable deaths [9]. Physicians are highly esteemed role models in the society, especially for issues related to health. They can play a major role in smoking prevention programs in the society [10]. But they should not smoke in order this role to prevail. We have previously shown that smoking lowers their confidence related to their role in smoking cessation of their patients [2].

Unfortunately, smoking rates among physicians in many countries including Turkey is quite high [2, 7, 8]. There does not seem to be much difference between some European countries and other developing countries in this respect [4, 5]. In a prospective descriptive trial by Senol et al., it appeared that most physicians start smoking during their

**Table 2** Changes in rates of smokers and smoking related characteristics

	2007 (%)	2012 (%)	P
Sex			
Male	29.5	17.7	0.0167
Female	22.6	3.9	<0.0001
Age of smoking			
Initiation (median)			
Female	16.8±5.5	17.7±2.5	>0.05
Male	18.2±3.8	17.9±2.4	>0.05
No of cigarettes per day			
Female	11.6±6.9	7.7±7.1	>0.05
Male	14.1±7.3	13.4±9.6	>0.05

medical school training years. The highest initiation of smoking was in the first year, and 83.3 % of students who started smoking during medical training did so at the first 3 years of medical school [1]. Significant variables affecting initiation of smoking in this trial were male gender, other smokers among friends, insufficient nutrition, and high anxiety score [1]. The trait anxiety score was significantly higher in these students than in nonsmokers [1]. Our survey in 2007 also confirmed that 60 % of smokers started smoking at the medical school. Likewise, male gender and higher rates of smokers among friends and family members were common characteristics of smokers in our study.

Accordingly, we focused on students in the first 3 years of medical school by giving lectures and conferences to prevent them from starting to smoke. Also, annual symposiums related to our goal were held at the preclinic building to facilitate their attendance. Regular monthly meetings of the group kept the enthusiasm focused on our aim at a high level. Our strategy was based on increasing the awareness of medical students about the detrimental effects of smoking on public health and preventing them from starting to smoke by reminding their future responsibility as role models in the community.

The results show that our operations were highly successful. We achieved a 60 % drop in the smokers' rate among all the medical students in 5 years. Moreover, the decline in the smokers' rate of sixth year medical students, the year before graduation, was almost 75 %. Our future prospect is to decrease the smokers' rate among medical school students to less than 5 % in the next 5 years.

In 2009, while the smoking rates of first and third year students were 11.6 %, it was 21.8 % at the sixth year. These sixth year students were at the second year of medical school in 2008 when our anti-smoking campaign started. Therefore, most of the smokers in this group had already started smoking before our intervention. Though the rate of smokers who wanted to quit smoking in 2007 was 46.3 %, high rate of smoking for these students at sixth year of medical school suggests that smoking cessation has not been successful. This striking difference in smoking rates of third year and sixth year students in 2009 also suggest that prevention of smoking initiation may be more realistic than a cessation program.

The rates of those who quit smoking and rates of nonsmokers in the families were not higher in 2012 compared to 2009, which excludes their role in the decline of smokers. More prominent decline of smokers' rate in female students compared to males may be partially related to cultural influence in Turkish society.

Legislation against the harms of smoking may have also facilitated the decline of smokers among medical students. The Ministry of Health reported that the rate of smoking has dropped to 27.1 from 33.4 % in the last 6 years in Turkey [11]. In our survey in 2009, one third of smoker students expressed

that they reduced smoking following the new legislation, which prohibited smoking in all enclosed public places. Also, the decline of smoking rate of first grade students in 2012 compared to 2009 suggests the positive effect of the new legislation.

We believe that all our activities were beneficial to some degree for the decline in smoking rates. However, lectures to students at first 3 years of medical school related to harms of smoking and their future responsibilities as role models in the community in health issues may be more impressive than the other events. Especially, the opening lecture to first grade medical students may be more influential as they are highly motivated to become good physicians at this first step to medical school.

In conclusion, increasing awareness of medical students about the harms of smoking and their responsibilities as physicians to prevent diseases caused by smoking starting at the first year of medical school steeply decreased the smoking rates among medical students. This success which was based on the efforts to decrease smoking initiation at medical school should be a motivating example for all the medical schools in the world, where the students' smoking rates are high. Decreasing the smoking rates among physicians is an important way of fighting against cigarette smoking in the world. Especially in those countries with limited sources for health expenditures, fighting against smoking is the most cost-effective measure of disease prevention. Medical schools should organize anti-smoking groups led by voluntary faculty members, targeting to decrease the smoking rates of medical students. Constant and determined approaches for prevention of smoking initiation are more drastic than those aimed to cease smoking.

**Conflict of Interest** We declare that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

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