

THE RELATIONSHIP BETWEEN SMOKING AND EXERCISE AMONG PHYSICAL EDUCATION TEACHERS IN TURKEY

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Abstract. We studied the relationship between smoking and exercise among physical education teachers in Turkey. An online questionnaire was used to collect data. The responses of 1,995 teachers who completed the questionnaire were evaluated. The mean age of the participants was 31.0±4.7 years; 67.4% of the participants were male. The smoking rate was 65.2%. The mean age of onset of smoking was 16.6±2.6 years. The age of starting smoking increased with higher parental education level. There were no differences between smokers and non-smokers with respect to gender. Of smokers, 51.2% were married; 52.4% were in the 30-39 year old age group. The most common reasons for starting smoking were the influence of friends and emulation. The most common reason for trying to quit smoking among men was future health concerns and among women was current health concerns. We found smoking was less common among participants who exercised regularly. The level of nicotine dependence was significantly lower among participants who exercised regularly compared to those who did not. This study suggests physical education teachers, who are role models for their students, have a high smoking rate. We believe urgent action is needed to reduce the smoking rate and increase the quit rate among physical education teachers.

Keywords: cigarette, physical education teachers, habit, exercise, Turkey

INTRODUCTION

Nicotine is a highly addictive and regular use results in nicotine addiction (Steele, 2011). Smoking habit is a social, educational and public health issue that affects large number of people because of its consequences (Kutluk and Kars, 1994). Of 1.5 billion smokers world-wide, 800,000 reside in developing countries

(Yorgancioğlu and Esen, 2000). Forty percent of smokers started smoking between the ages of 15 and 19 (Yorgancioğlu and Esen, 2000).

According to the "Family Structure Research" conducted by the Turkish Statistics Institute in 2006, 33.4% of individuals aged 18 and over in Turkey are smokers. The smoking rate was found to be 50.6% among men and 16.6% among women (Turkish Statistics Institute, 2006).

Physical education and sports are devoted to maintaining and improving health. It is important physical education teachers understand the importance of

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health themselves to share their knowledge with students (Kilinc *et al*, 1999). Some studies have shown smoking negatively affects sportive performance. Fubuka *et al* (1993) found smoking negatively affects aerobic and anaerobic ability. Sidney *et al* (1993) found a smoker's physical performance is more restricted than nonsmokers. Ozer (2001) found smokers get tired more easily during exercise and tended to stop earlier.

Studies show social learning plays a major role in smoking behavior; people who are role models for the young can discourage them from starting smoking and encourage them to quit smoking by either not smoking or quitting smoking themselves (Kucukkavruk, 2002). Teachers play an important role in reducing smoking rates and physical education teachers in particular are even more important since smoking and sports do not mix (Peksen *et al*, 2005).

In this study we assessed the relationship between smoking and exercise among physical education teachers.

MATERIALS AND METHODS

We conducted this cross sectional descriptive study to compare smoking exercise among physical education teachers in Turkey. Among a total of 20,074 permanent and contract physical education teachers working in various schools located in different cities in Turkey affiliated with Ministry of National Education during the school year of 2010-2011, 2,000 (10%) were randomly selected by drawing lots for this study, of whom 1,995 teachers (99.75%) completed the questionnaire. Teachers included in the study had the same socioeconomic status and education levels (a four-year university diploma).

Ethical approval was obtain from Fi-

rat University, Faculty of Medicine Ethics Committee. Teachers were asked to fill out an online questionnaire developed by the researchers consisting of questions about demographics opinions about smoking and level of nicotine dependence (Fagerström Nicotine Dependence Scale). In 1978, Fagerström developed the Fagerström Tolerance Questionnaire (FTQ) to measure nicotine dependence. The test was revised in 1992 by Fagerström, Heatherton and Kozlowski, and the Fagerström Test for Nicotine Dependence (FTND) was developed (Pomerlau *et al*, 1994). In our country, the FTND has been used by Günes *et al* (2001). The FTND consists of six items: each item is rated on a different scale. A total score >4 indicates probable nicotine dependence. The test categorizes people into five groups as follows: very low probability of nicotine dependence (0-2 points); low probability (3-4 points), medium probability (5 points), high probability (6-7 points) and very high probability (8-10 points) (Pomerlau *et al*, 1994). In this study, FTND scores were categorized into three groups: low (0-3 points); medium (4-5 points); and high probability of nicotine dependence (6-10 points).

Regular exercise was defined as exercising for at least 30 minutes a day, at least three days per week. Participants who smoked every day, at least one cigarette per day, were considered as smokers. The collected data were processed using SPSS to obtain percentages, means and chi-square analyses, depending on the variable in question. In this study, mean values are presented with standard deviations and a *p*-value <0.05 was considered statistically significant.

RESULTS

Of the 1,990 physical education teachers who participated in the study and

Table 1
Socio-demographic characteristics of the participants by smoking status.

	Smokers <i>n</i> (%)	Non-smokers <i>n</i> (%)	<i>p</i> -value
Gender (<i>N</i> =1,990)			
Men	876 (67.5)	465 (67.2)	0.895
Women	422 (32.5)	227 (32.8)	
Marital status (<i>N</i> =1,990)			
Married	665 (51.2)	331 (47.8)	0.001
Single	525 (40.4)	341 (49.3)	
Divorced	76 (5.9)	18 (2.6)	
Widow/Widower	32 (2.5)	2 (0.3)	
Age groups, years (<i>N</i> =1,995)			
<30	558 (43.1)	316 (45.3)	0.023
30-39	682 (52.5)	333 (47.8)	
≥40	58 (4.5)	48 (6.9)	

stated their gender, 67.5% were men and 32.5% were women. The mean age was 31.0 ± 4.7 years. Socio-demographic characteristics of the participants by smoking status are shown in Table 1.

Although the smoker and non-smoker groups were comparable by gender, there were significant differences between the two groups in marital status and age. More married participants were smokers (51.2%), and more single participants were non-smokers (49.3%). The majority of smokers (52.5%) were in the 30-39 year old age group.

Eighty-eight point three percent of participants had smoked at some point in their lives. Seventy-one point four percent had smoked at least 100 cigarettes during their lives. Fifty-three point four percent were regular smokers, and 11.8% smoked occasionally. Thirty-four point eight percent of participants were non-smokers. Smoking behavior among participants are summarized in Table 2.

Age 16-20 years was the most common age group at which both male and

female teachers started smoking. The mean age at onset of smoking was 16.6 ± 2.9 years (minimum=2, maximum=30). There were no significant differences between the two genders in respect to age of starting smoking. The most common reasons for starting smoking were the influence of friends and emulation; the most common reasons were similar between men and women. Of the men who had tried to quit smoking, the most common reason given was future health concerns and of the women who had tried to quit smoking, the most common reason given was current health concerns.

The age of starting smoking increased with increasing parental education level. Smoking was less common among participants who exercised regularly (56.9% vs 68.4%) (Table 3). Thirty point four percent of participants, who exercised regularly, smoked at least one cigarette per day; this level was higher among participants who did not exercise regularly (62.7%).

The distribution of participants with nicotine dependence by exercise status is

Table 2
Smoking behavior among participants.

	Men <i>n</i> (%)	Women <i>n</i> (%)	<i>p</i> -value
Age started smoking, years (<i>N</i> =1,768)			
10-15	436 (36.3)	181 (32.0)	0.191
16-20	684 (56.9)	346 (61.1)	
21-25	75 (6.2)	38 (6.7)	
26-30	7 (0.6)	1 (0.2)	
Reason for starting smoking (<i>N</i> =1,762)			
Influence of friends	470 (39.2)	212 (37.6)	0.076
Emulation	272 (22.7)	118 (20.9)	
Desire to look cool	32 (2.7)	17 (3.0)	
Psychological stress	90 (7.5)	95 (16.8)	
Adaptation to social environment	78 (6.5)	48 (8.5)	
Parental smoking	6 (0.5)	2 (0.4)	
Pleasure	86 (7.2)	23 (4.1)	
Curiosity	100 (8.3)	42 (7.4)	
Stress in the work environment	56 (4.7)	3 (0.5)	
Other	8 (0.7)	4 (0.7)	
Reason for trying to quit smoking ^a			
Disease (<i>N</i> =705)	32 (4.5)	17 (4.9)	0.010
Financial concerns (<i>N</i> =720)	355 (49.3)	177 (50.4)	
Health concerns (<i>N</i> =742)	653 (88.0)	325 (91.5)	
Concerns about a friend or family member's health (<i>N</i> =697)	302 (43.3)	107 (30.7)	
Future health concerns (<i>N</i> =700)	650 (92.9)	307 (87.5)	

^aMultiple reasons were accepted.

Table 3
Distribution of the participants according to smoking status and exercise status.

	Regular exercise		<i>p</i> -value
	Yes <i>n</i> (%)	No <i>n</i> (%)	
Cigarette smoking			
Yes	329 (56.9)	969 (68.4)	0.001
No	249 (43.1)	448 (31.6)	
Frequency smoked cigarettes			
I smoke every day (at least one cigarette per day)	176 (30.4)	888 (62.7)	0.001
I smoke occasionally	153 (26.5)	81 (5.7)	
I do not smoke	249 (43.1)	448 (31.6)	

Table 4
Distribution of participants with nicotine dependence by exercise status.

Nicotine dependence score	Regular exercise		p-value
	Yes n (%)	No n (%)	
0-3 (low dependence)	781 (64.4)	45 (51.7)	0.049
4-6 (medium dependence)	234 (19.3)	24 (27.6)	
7-10 (high dependence)	198 (16.3)	18 (20.7)	

shown in Table 4. Teachers who exercised regularly had lower nicotine dependence scores.

DISCUSSION

In the present study, we evaluated smoking behavior among physical education teachers and investigated the relationship between smoking behavior and exercise status. Fifty-three point four percent of participants were regular smokers and 11.8% smoked occasionally. Turgut *et al* (2001) found a smoking rate among teachers was 42.2% in Turkey. As for other countries, the smoking rate among high school teachers was found to be 37.2% in Spain, 44.7% in Japan, 33% in Romania, 20% in Malaysia and 21.4% in India. In Estonia, the smoking rate was 40% among male teachers and 11% among female teachers. In Italy, smoking rates were 35% and 30% among male and female teachers, respectively (Barrueco *et al*, 2000). In the present study, the smoking rates were 65.3% and 65.0% among male and men female teachers, respectively. The rate of smoking was high in this study population. Although there was no significant difference between smokers and non-smokers in respect to gender, the majority of smokers (51.2%) were married and

were in the 30-39 year age group (52.5%). There were no significant differences between the two genders with respect to age of starting smoking. Marakoglu *et al* (2006) found the majority of smokers start during high school or college years.

Smoking was less common among participants who exercised regularly (51.7% vs 64.4%). In a study of the relationship between smoking and physical activity among adolescents, Subaşı *et al* (2004) found a significant relationship between smoking and physical activity.

There were several limitations of our study. Socio-demographic factors, educational attainment, years of teaching and family income were not included in the study.

In conclusion, we found a high smoking rate among physical education teachers in Turkey. The rates of smoking and high dependence were lower among teachers who exercised regularly. Urgent plans are needed to reduce the smoking rate and increase the quit rate among physical education teachers in Turkey.

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