

Recognition of Cigarette Logos by Primary School Children

Sigara Logolarının İlkokul Öğrencileri Tarafından Tanınması

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ABSTRACT Objective: The aim of this study was to determine the smoking prevalence, the related factors and the recognition rates of cigarette logos by primary school children. **Material and Methods:** A questionnaire with multiple-choice questions on colored product logos was completed in their classrooms by 818 (395 boys and 423 girls) students in three primary schools (classes 2-5) in Sivas in this descriptive study. **Results:** Ever-smoking prevalence was 4.6% (4.3% in boys and 5.0% in girls). More than half of the students (60.8%) had at least one smoker parent. Smoking was more prevalent in children with a smoker mother (p= 0.001) and with a smoker teacher (p= 0.026). The rate of self-purchasing cigarettes in the week preceding the survey was 30.4%. The recognition rates of cigarette logos were 81.1% for Camel, 30.7% for Marlboro, 65.7% for Samsun and 80.9% for Maltepe. **Conclusion:** The cigarette logos were one of the most commonly recognized product logos by children. Certain measures must be taken into consideration to ban cigarette advertisements.

Key Words: Smoking; schools; child

ÖZET Amaç: Bu çalışmanın amacı, ilkököl öğrencilerinde sigara içme prevalansını, etki eden faktörleri ve sigara amblemlerini tanıma oranlarını belirlemektir. **Gereç ve Yöntemler:** Bu tanımlayıcı çalışmada, renkli logolar ile ilgili çoktan seçmeli sorular içeren bir anket, Sivas'ta üç farklı ilkökölde, 2-5. sınıflardaki 818 (395 erkek ve 423 kız) öğrenciye dersliklerinde uygulandı. **Bulgular:** Öğrencilerin hayatlarının herhangi bir döneminde sigara içme prevalansı %4.6 (erkeklerde %4.3, kızlarda %5.0) idi. Öğrencilerin yarısından fazlasının (%60.8) ebeveynlerinden biri sigara içmekteydi. Annesi ve öğretmeni sigara içen öğrencilerde sigara içme oranı daha fazlaydı (sırasıyla; p= 0.001, p= 0.026). Geçen hafta boyunca sigara satınalma oranı %30.4 idi. Sigara logolarını tanıma oranları; Camel için %81.1, Marlboro için %30.7, Samsun için %65.7 ve Maltepe için %80.9 idi. **Sonuç:** Sigara logoları, çocuklar tarafından en fazla tanınan ürün logolarından birisidir. Sigara reklamlarının önlenmesi hususunda gerekli tedbirlerin alınması gerekmektedir.

Anahtar Kelimeler: Sigara içme; okullar; çocuk

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Smoking is the major single known cause of non-communicable diseases and continues to be a worldwide public health problem.¹⁻³ The smoking epidemic is supported by advertisements and promotional activities of the tobacco industry and affects the whole population including children and adolescents.⁴ However, children are more receptive to cigarette advertisements than adults.⁵ It was reported that children as young as the age of six can easily recall tobacco advertisements.⁶ It has also been shown that the cartoon image of Camel (Old Joe) was successfully

identified as a cigarette logo by children as young as three years age.⁷ Children who are more aware of cigarette advertisements are more likely to smoke,⁸⁻¹⁰ and they are also more likely to buy the most heavily advertised brands.¹¹ Collectively all these findings suggest that there is a strong relationship between underage smoking and tobacco advertisements or promotion. It is also widely accepted that cigarette advertisements has role in children's decision to smoke.^{4,12}

The ever-smoking prevalence and the recognition rate of cigarette logos by primary school children before the adoption of National Tobacco Control Legislation in 1996 in Turkey were investigated by Emri et al.¹³ They found the ever-smoking prevalence to be 11.7% and the recognition rate of cigarette logos as high as 90.5% (Camel), which were similar to results of studies by other countries.¹⁴⁻¹⁹ To our knowledge, our study is the first one on under-age smoking in a small city of Turkey.

The aim of this study was to find the ever-smoking prevalence, the related factors and the recognition rates of cigarette logos by primary school children.

MATERIAL AND METHODS

SUBJECTS

Three socio-economic levels (poor, moderate, rich) determined by the national education directorate were put into consideration. Three primary schools in Sivas were selected by simple random sampling for each socio-economic level. All 818 students (395 boys and 423 girls) in classes 2-5 (aged 7-12) were included in the study. From the total of 880 students, 818 students (395 boys and 423 girls) in classes 2-5 (aged 7-12) were included in the study. Sixty two students were excluded from the study because of nonattendance and discordance.

DESIGN AND DATA COLLECTION

The present study was conducted in April and May 2002. After informed consent obtained a questionnaire with multiple-choice questions on colored product logos was completed in the classroom in this descriptive study. The students completed the

questionnaires at one session on different days for different classes. Children were given assurance on confidentiality and anonymity. Teachers and researchers were in the classrooms during the completion of questionnaires.
















A pilot study was performed in a primary school located in the university campus among 50 students to ensure the clarity, validity and reliability of the questionnaire.

QUESTIONNAIRE

There were questions on demographic details; current smoking status of children, parents and teachers; the student's attitudes towards the smoking behavior of parents and teachers, smoking in crowded public areas; self-purchasing cigarettes and the adverse effects of smoking on health. There were one traffic sign (warning to drive slowly near school) and fourteen colored product logos without brand names in the questionnaire. The children were asked to classify the product logos into seven categories according to the products they represented: food, cigarettes, bank, gas station, traffic sign, electric home-devices and not known. The logos were Samsun (a domestic cigarette), Maltepe (a domestic cigarette), Marlboro (red chevron), Camel (traditional camel on the cigarette package), McDonald's (fast-food), Uzay (Turkish logo representing Cheetos), Algida (ice-cream), Sutas (Turkish milk company), SEK (Turkish milk company), Ziraat Bankasi (Turkish Farmers Bank), Pamukbank (a Turkish bank), Petrol Ofisi (a Turkish oil company), Shell (an international oil company), Arcelik (a Turkish company producing electric home-devices) (Figure 1). Non-cigarette product logos were chosen since they are advertised widely on television and radio and, if possible, were the same as those used by Emri et al (1996).¹³ However, since 1996, brand prominence has changed, so four non-tobacco brands (Tuborg, Colgate, Coke and Milka) used in the Emri et al study were not placed in our questionnaire but five product logos (Samsun, Camel, Marlboro, Uzay and McDonald's) were the same as those used in the Emri *et al* study.

A formal consent was given by the regional Department of Education.

FIGURE 1: The product logos placed in the questionnaire.

1. Camel (traditional camel on the cigarette package)	
2. Uzay (Turkish logo representing Chee-tos)	
3. Traffic sign (warning to drive slow near a school)	
4. Arcelik (A Turkish company producing electrical home-devices such as refrigerators)	
5. Shell (An international oil company)	
6. McDonald's (fast-food)	
7. T.C. Ziraat Bankası (Turkish Farmers Bank)	
8. Algida (ice-cream)	
9. Marlboro (red chevron)	
10. Petrol ofisi (a Turkish gas station company)	
11. Samsun (a domestic cigarette)	
12. Süt Endustrisi Kurumu (Turkish milk company)	
13. Maltepe (a domestic cigarette)	
14. Sütaş (Turkish milk company)	
15. Pamukbank (a Turkish bank)	

DATA ANALYSIS

The recognition of logos was coded as correct and incorrect. Smoking status of children was classified as; (1) never smoked, (2) tried smoking once or more, (3) smoking sometimes but less than six cigarettes a week, (4) smoking six or more cigarettes a week. The child was defined as never-smoker (answer 1) or ever-smoker (answer 2, 3 or 4). Data were installed and analyzed using SPSS and EpiInfo software programs. Descriptive statistics and Chi-square test were used. All statistical calculations were performed in 95% confidence interval and the level of significance was set as “ $p < 0.05$ ”.

RESULTS

From the total of 910 students, 880 students who were in the classroom at the time of the survey completed the questionnaires (96.7%). Due to missings in smoking status and discordance 62 questionnaires were excluded. The response rate was 92.9%. The mean age was 9.7 ± 1.1 years (range 7-12).

The ever-smoking prevalence was 4.6% (4.3% in boys and 5.0% in girls). There was no significant difference for gender and age groups (≤ 8 years vs ≥ 9 years) ($p > 0.05$ for both). However, the highest

prevalence of ever-smoking was observed in the third class (7.0%) ($p = 0.042$), (for boys in the second class (9.4%, 6/64) and for girls in the third class (9.1%, 13/143). Only five students were smoking > 6 cigarettes per week. Surprisingly, all of them were girls (Table 1).

Of students' fathers, 32.5% had university education and the lowest ever-smoking prevalence was in children of these fathers' (1.2%) and the highest was in children of fathers with primary school degree (12.6%) ($p = 0.001$). There was no significant relationship between the student's smoking behavior and the mother's educational status ($p > 0.05$). Ever-smoking prevalence was significantly higher in children whose fathers were unemployed ($p = 0.034$) and in children who had a working mother ($p = 0.001$). At least one parent of 60.8% of students was a smoker. Smoking was more prevalent (23.5%) in children with a smoker mother ($p = 0.001$). Most of the smoker parents (69.7%) preferred foreign brand cigarettes. There was no significant relationship between the student's smoking behavior and the parent's preferred cigarette brands (foreign vs domestic) ($p > 0.05$). Ever-smoking prevalence was significantly higher in children (9.4%) whose teachers were smokers

TABLE 1: Smoking prevalence and the number of smoked cigarettes by gender.

Smoking status	Gender					
	Boys		Girls		Total	
	n	%*	n	%*	n	%**
Never-smoked	378	48.5	402	51.5	780	95.4
Tried once or more	11	64.7	6	35.3	17	2.1
Smokes sometimes but <6 cigarettes per week	6	37.5	10	62.5	16	1.9
Smokes > 6 cigarettes per week	0	0	5	100	5	0.6
Total	395	48.3	423	51.7	818	100.0

* Row percent, ** Column percent.

($p=0.026$). The rate of self-purchasing cigarettes in the week preceding the survey was 30.1% without being influenced by the smoking behavior of the student ($p>0.05$). Nearly half of the children (45%) stated that they had not been taught at school about the adverse effects of smoking on health. There was no significant relationship between the smoking behavior of the student and the health education on smoking ($p>0.05$) (Table 2).

Over 75% of the students reported negative attitudes towards smoking of their parents or teachers and also smoking indoors or in crowded public areas. Ever-smokers had a significant tendency to accept smoking as a natural behavior ($p<0.05$) (Table 2).

The recognition rates of cigarette logos were 81.1% for Camel, 30.7% for Marlboro, 65.7% for Samsun and 80.9% for Maltepe while it was 95.5% (Arcelik) and 42.5% (Ziraat Bank) for the non-cigarette product logos (Table 3). There was no significant difference between the recognition rates of four cigarette logos and being an ever- or never-smoker [OR': 0.56 (0.25-1.27) for Camel; 0.71 (0.25-1.90) for Marlboro; 1.12 (0.53-2.40) for Samsun and 1.26 (0.49-3.41) for Maltepe]. The recognition rates of all cigarette logos and half of the non-cigarette logos were significantly higher in boys ($p<0.05$). The recognition rate of the traffic sign was higher in girls ($p<0.05$) (Table 4). Only the recognition rate of cigarette logo for Samsun was higher in < 9 years [OR': 0.36 (0.22-0.59)]. The recognition rate of Marlboro logo and most of the non-cigarette logos was higher in children > 8 ye-

ars [OR': 1.83 (1.14-2.97) for Marlboro] (Table 5). The recognition rates of three cigarette logos, except Marlboro, were significantly higher in children with at least one smoker parent [OR': 2.32 (1.59-3.39) for Camel; 0.98 (0.71-1.36) for Marlboro; 1.95 (2.54-5.56) for Samsun and 3.76 (2.54-5.56) for Maltepe]. Camel and Maltepe logos were recognized more successfully by children who bought cigarettes in the week preceding the survey [OR': 1.64 (1.06-2.56) for Camel and 2.23 (1.40-3.59) for Maltepe].

DISCUSSION

The prevalence of smoking in primary school students in Turkey and in other countries has been reported as 9%-18%.¹³⁻²⁰

Our rate (4.6%; 4.3% in boys and 5% in girls) is lower than the prevalence of metropolitan cities in Turkey¹³ and other countries,¹⁴⁻¹⁹ except one reported from Hong Kong in 2004.²¹ In the recent Hong Kong study, Fielding et al²¹ replicated the study protocol used by Peters et al¹⁹ in 1990 in Hong Kong and compared the ever-smoking prevalence and the recognition rates of tobacco brands in young children before (1991) and after (2001) the implementation of the cigarette advertisement restrictions in Hong Kong. They found a substantial decline in recognition rates of cigarette brands and logos accompanied by a decrease in ever-smoking prevalence (7.80% in 1991 vs 3.80% in 2001). The percentage of regular smokers in the seventh and eighth class students was reduced from 16% to 5% in almost two years after implementation of le-

TABLE 2: Accompanying factors for the ever-smoking prevalence.

Variables	Alternatives	Never- smoked n (%)	Ever-smoking n (%)	χ^2	p
Gender	Boys	378 (95.7)	17 (4.3)	0080	0.778
	Girls	402 (95.0)	21 (5.0)		
Age	<8 years	132 (95.7)	6 (4.3)	0.000	1.000
	>9 years	648 (95.3)	32 (4.7)		
Classes	Second	154 (94.5)	9 (5.5)	8.194	0.042
	Third	253 (93.0)	19 (7.0)		
	Fourth	135 (96.4)	5 (3.6)		
	Fifth	238 (97.9)	5 (2.1)		
Number of siblings	None	93 (93.9)	6 (6.1)	7.411	0.116
	One	309 (94.2)	19 (5.8)		
	Two	232 (96.3)	9 (3.7)		
	≥ 3	145 (99.3)	1 (0.7)		
Paternal educational status	Illiterate	13 (100)	0 (0)	29.538	0.000
	Primary school	90 (87.4)	13 (12.6)		
	High school	377 (95.2)	12 (4.8)		
	University	240 (98.8)	3 (1.2)		
Maternal educational status	Illiterate	53 (93.0)	4 (7.0)	3.652	0.445
	Primary school	182 (96.8)	6 (3.2)		
	High school	403 (94.8)	22 (5.2)		
	University	106 (94.6)	6 (5.4)		
Parental employment status	Working father	719 (95.9)	31 (4.1)	4.494	0.034
	Unemployed father	46 (88.5)	6 (11.5)		
	Working mother	124 (88.6)	16 (11.4)	14.988	0.000
	Housewife	640 (96.7)	22 (3.3)		
Parental smoking status	No one smoking	312 (99.0)	3 (1.0)	62.595	0.000
	Father smoking	312 (96.0)	13 (4.0)		
	Mother smoking	52 (76.5)	16 (23.5)		
	Both smoking	97 (97.0)	3 (3.0)		
Preferred cigarettes by parents	Domestic brands	144 (93.5)	10 (6.5)	0.817	0.366
	Transnational brands	329 (92.9)	25 (7.1)		
Teacher's smoking status	No smoking	534 (95.5)	25 (4.5)	7.303	0.026
	Smoking	96 (90.6)	10 (9.4)		
	Unknown	147 (98.0)	3 (2.0)		
Attitudes towards parental smoking	Definitely wrong	612 (75.0)	18 (25.0)	38.747	0.000
	Natural	24 (96.0)	1 (4.0)		
	No opinion	68 (91.9)	6 (8.1)		
Attitudes towards teacher's smoking	Definitely wrong	568 (95.1)	29 (4.9)	14.176	0.001
	Natural	30 (83.3)	6 (16.7)		
	No opinion	158 (98.1)	3 (1.9)		
Attitudes towards smoking in public	Definitely wrong	711 (96.5)	26 (3.5)	43.819	0.000
	Natural	10 (62.5)	6 (37.5)		
	No opinion	53 (94.6)	3 (5.4)		
Purchasing cigarette	Yes	237 (97.5)	6 (2.5)	3.030	0.082
	No	543 (94.4)	32 (5.6)		
Counseling about smoking	Yes	432 (96.4)	16 (3.6)	2.147	0.143
	No	345 (94.0)	22 (6.0)		

TABLE 3: Overall recognition rates.

Product categories	Brand logos	Correct		Incorrect		Not known		Total n
		n	%	n	%	n	%	
Cigarette	Camel	641	81.1	24	3.1	125	15.8	790
	Marlboro	238	30.7	163	2.0	374	48.3	775
	Samsun*	522	65.7	56	7.0	217	27.3	795
	Maltepe*	645	80.9	55	6.9	97	12.2	797
Food	SEK	550	68.6	63	7.8	189	23.6	802
	Mc Donald's	704	92.3	21	2.7	38	5.0	763
	Sutas	757	94.4	12	1.5	33	4.1	802
	Algida	717	91.5	24	3.0	43	5.5	784
	Uzay	579	72.5	43	5.3	177	22.2	799
Oil company	Petrol Ofisi	702	90.2	40	5.2	36	4.6	778
	Shell	446	57.8	134	17.3	192	24.9	772
Bank	Ziraat	335	42.5	65	8.2	389	49.3	789
	Pamuk	501	62.0	45	5.6	262	32.4	808
Electric devices	Arcelik	762	95.5	25	3.0	12	1.5	799
Traffic sign	Speed limitation near school	703	89.8	18	2.3	62	7.9	783

* Domestic cigarettes.

TABLE 4: Recognition rates of product logos by gender.

Product categories	Brand logos	Recognition rates by gender				95% Confidence Interval		
		Boys		Girls		χ^2	p	Unadjusted OR
		n	%	n	%			
Cigarette	Camel	331	86.9	310	75.8	15.114	0.000	2.11 (1.43-3.13)
	Marlboro	138	35.9	100	25.6	9.295	0.002	1.63 (1.19-2.25)
	Samsun*	275	70.2	247	61.3	6.535	0.011	1.48 (1.09-2.02)
	Maltepe*	327	84.3	318	77.8	5.082	0.024	1.53 (1.05-2.23)
Food	SEK	257	65.4	293	71.6	3.342	0.068	0.77 (0.57-1.05)
	Mc Donald's	348	93.5	359	91.0	1.338	0.247	1.41 (0.80-2.51)
	Sutas	371	94.4	368	94.4	0.000	1.000	1.00 (0.53-1.89)
	Algida	356	92.0	361	90.9	0.161	0.688	1.14 (0.82-1.40)
	Uzay	313	80.3	266	64.6	22.420	0.000	2.19 (1.56-3.05)
Oil company	Petrol Ofisi	361	93.3	341	87.2	7.454	0.006	2.04 (1.21-3.45)
	Shell	253	66.4	193	49.4	22.283	0.000	2.03 (1.50-2.74)
Bank	Ziraat	184	47.7	151	37.5	7.983	0.005	1.52 (1.13-2.04)
	Pamuk	282	71.8	219	52.8	30.080	0.000	2.27 (1.68-3.08)
Electric device	Arcelik	371	94.4	391	96.3	1.236	0.266	0.64 (0.31-1.31)
Traffic sign	Speed limitation near school	334	87.2	369	92.3	4.890	0.027	0.57 (0.35-0.94)

* Domestic cigarettes, CI: confidence interval, OR: odds ratio.

gal restrictions in tobacco products sale to youth in Woodridge (USA).²² Similar findings suggests that tobacco control efforts in Greece should also target elementary school students, especially the fifth and sixth class students.²³ Another study provides evi-

dence of a change in exposure to second-hand smoke in primary school students in Scotland after the introduction of smoke-free legislation.²⁴

We also found a substantial decline in ever-smoking prevalence compared to the study of Em-

TABLE 5: Comparison of the recognition rates by the ages of 8 years or less and the ages of 9 years or older.

Product categories	Brand logos	Recognition rates by gender				95% Confidence Interval		
		9 years old or older		8 years old or less		χ^2	p	Unadjusted OR's
		n	%	n	%			
Cigarette	Camel	530	80.2	111	86.0	2.058	0.151	0.66 (0.38-1.16)
	Marlboro	211	32.7	27	20.9	6.145	0.011	1.83 (1.14-2.97)
	Samsun*	411	62.3	111	82.2	18.907	0.000	0.36 (0.22-0.59)
	Maltepe*	528	79.8	117	86.7	3.034	0.082	0.61 (0.35-1.07)
Food	SEK	445	67.0	105	76.1	3.950	0.047	0.62 (0.40-0.96)
	Mc Donald's	605	94.1	99	82.5	17.450	0.000	3.42 (1.85-6.28)
	Sütaş	637	95.5	120	88.9	8.065	0.005	2.68 (1.33-5.36)
	Algıda	600	92.0	117	88.6	1.208	0.272	1.50 (0.78-2.84)
	Uzay	471	70.9	108	80.0	4.179	0.041	0.59 (0.36-0.95)
Oil station	Petrol Ofisi	618	94.4	84	68.3	76.847	0.000	7.84 (4.60-13.3)
	Shell	389	59.1	57	50.0	2.948	0.086	1.47 (0.97-2.23)
Bank	Ziraat Bankası	305	46.4	30	22.7	24.301	0.000	2.89 (1.83-4.57)
	Pamukbank	426	63.6	75	54.3	3.759	0.759	1.43 (0.97-2.10)
Refrigerator	Arçelik	648	97.2	114	86.4	26.646	0.000	5.44 (2.64-11.2)
Traffic sign	Trafik sign	592	89.7	111	90.2	0.000	0.983	0.95 (0.47-1.88)

* Domestic cigarettes.

ri et al.¹³ They found ever-smoking prevalence in primary school children (classes 2-5) to be 11.7% (13.9% in boys and 9.1% in girls). However, their study was performed in a metropolis with a population over 3 million (Ankara) while the present study was performed in a relatively small city with a population of approximately 250.000 (Sivas). In addition, the present study did not follow the Emri et al¹³ study protocol step by step. Due to the lack of any legislation against cigarette advertisements before 1996, Turkish children had widely been exposed to cigarette advertisements. By the year 1996, a tobacco control legislation including comprehensive advertisement restrictions was adopted in Turkey.¹³ The differences, therefore, may also be reflecting the real changes in ever-smoking prevalence that occurred as a result of the tobacco control legislation's effects. Hong Kong and Woodridge experiences support this suggestion.^{21,22}

Smoking prevalence in the youth generally increases with the increasing age in other countries.²⁵⁻²⁷ However, we found a higher prevalence of ever-smoking in the third class being consistent with the finding (higher prevalence of ever-smoking in children ≤ 8 years) of Emri et al¹³ This finding alarmingly demonstrates that the initiation

age for smoking has shifted downwards to the pre-teens. It has often been reported^{13,15,19} that there was a significant difference in smoking prevalence based on gender. However, we did not find such a difference in our sample. In oriental cultures, women are traditionally protected against the harmful habits such as gambling, drinking and smoking. This finding is particularly interesting as it demonstrated that the traditional protection was not permanent any more, at least for smoking, even in a smaller city in the mid Anatolia. We found a higher ever-smoking prevalence in children whose fathers were unemployed and had a lower educational status. Those two parameters were predictors of the lower socio-economic status. We also found a higher ever-smoking prevalence in children with working mothers. This parameter, on the other hand was a predictor of the higher socio-economic status. Emri et al¹³ found no significant relationship between the ever-smoking prevalence and socioeconomic status. So, this issue requires more investigation.

Surprisingly, we found a low recognition rate for the Marlboro logo. Children whose parents smoke foreign cigarettes have more tendencies to recognize bank and oil company logos (p< 0.05).

This may be linked to the fact that parents who smoke expensive foreign cigarettes have cars and money in banks.

It was interesting that although there are no McDonalds in Sivas all of the children whose parents smoke recognized McDonalds logos.

Surprisingly, Camel logos were found to be more recognized than Marlboro logos ($p < 0.05$). This could be a fact that an animal like a camel could be sympathetic among children. Since almost half of the participants gave the answer “don’t know” for the Marlboro logo, we thought that the red chevron logo of Marlboro may have been a wrong choice for a questionnaire on which were placed only logos, but not brand names. There was a decline in the recognition rates of cigarette logos in primary school students compared to those of Emri et al¹³ (81.1% vs. 90.5% for Camel and 65.7% vs. 80.8% for Samsun). However, the cigarette logos were still placed among the most recognized product logos by primary school children who participated in the present study. The first reason for the high recognition rates of cigarette logos may be a result of the ongoing cigarette advertisements and promotions. Tobacco companies find ways to circumvent the law which bans advertisements and promotion: Point-of-sale advertisements are extensively used in Turkey. TV film characters who are smokers are indirect advertisements that provide a source of positive images for smoking. The distribution of cigarettes to the sale points is performed by workers in specially decorated cars painted with the colors of the most famous cigarette brands (for example, white and red for Philip Morris products). This is another way for indirect advertisements to be used by the tobacco companies in Turkey. The second factor for this high recognition rate may be that many children are exposed to the cigarette brands and logos through the usage of their teachers or parents. The attractive and positive imagery of cigarette boxes may contribute to this process. In addition to the mediator role for the high recognition of cigarette logos by the children, smoking parents or teachers may also play an important role in the minds of chil-

dren regarding the legalization of smoking behavior, because the primary role-models for this age group are parents and teachers. In this study, the prevalence of ever-smoking and the recognition rates for cigarette logos were both significantly higher among children whose fathers or teachers were already smokers. This observation supported our suppositions. We suggest, therefore, the attractive and positive imagery of cigarette boxes have to be re-designed on which photos and images could be placed in order to warn or discourage the smokers and children. Additionally, since the tobacco industry supports the image of cigarettes with more attractive situations, more enjoyable, more physically or psychologically fit and more socially acceptable, more efforts in the anti-smoking activities should be expended to support the image of cigarettes having harmful effects on physical, psychological or social health.

Contrary to other studies,^{19,22} but in agreement with the study of Emri et al,¹³ our study showed no difference in the recognition rates for cigarette logos according to smoking status of children. This issue also requires more investigation. The negative attitudes towards smoking behavior of parents or teachers and smoking in public places were common among children in agreement with the finding of S. Emri et al.¹³ In agreement with the previous study,¹³ 30.1% of students reported having bought cigarettes during the week preceding the survey. So, selling the tobacco products to children was ongoing, despite the presence of a law forbidding selling tobacco products to children since 1996 in Turkey. Monitoring of selling tobacco products to children needs to begin.

In conclusion, an encouraging finding was the very low smoking prevalence among primary school children living in Sivas compared to those of metropolitan cities in Turkey and those of other countries. However, the finding that cigarette logos are among the most highly recognized product logos by children was discouraging. This is most likely due to ongoing active tobacco advertisements and also exposure passively to cigarette brands and logos through the familial usage.

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