

Recognition of cigarette brand names and logos by primary schoolchildren in Ankara, Turkey

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Abstract

Objective—To assess the smoking behaviour of primary schoolchildren and their ability to recognise brand names and logos of widely advertised cigarettes, compared with other commercial products intended for children.

Design—Cross-sectional survey in classroom settings using a questionnaire designed to measure attitudes towards smoking and the recognition of brand names and logos for 16 food, beverage, cigarette, and toothpaste products.

Setting—Ankara, Turkey.

Subjects—1093 children (54.6% boys, 44.4% girls) aged 7–13 years (mean = 10, SD = 1), from grades 2–5. The student sample was taken from three primary schools—one school in each of three residential districts representing high, middle, and low income populations.

Main outcome measures—Prevalence of ever-smoking, recognition of brand names and logos.

Results—Prevalence of ever-smoking was 11.7% overall (13.9% among boys and 9.1% among girls; $p < 0.05$). Children aged eight years or less had a higher prevalence of ever-smoking (19.6%) than older children ($p < 0.002$). Ever-smoking prevalence did not differ significantly across the three school districts. Ever-smoking prevalence was higher among children with at least one parent who smoked (15.3%) than among those whose parents did not (4.8%) ($p < 0.001$). Brand recognition rates ranged from 58.1% for Chee-tos (a food product) to 95.2% for Samsun (a Turkish cigarette brand). Recognition rates for cigarette brand names and logos were 95.2% and 80.8%, respectively, for Samsun; 84.0% and 90.5%, respectively, for Camel; and 92.1% and 69.5%, respectively, for Marlboro. The Camel logo and the Samsun and Marlboro brand names were

the most highly recognised of all product logos and brand names tested.

Conclusions—The high recognition of cigarette brand names and logos is most likely the result of tobacco advertising and promotion. Our results indicate the need to implement comprehensive tobacco control measures in Turkey.

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Keywords: advertising, brand recognition, children, Turkey

Introduction

Turkey is a developing country with a population of 62.5 million (according to 1995 estimates). The total population is expected to reach 67 million by the year 2000. The population is predominantly young, with 40.6 million above 15 years of age. The fertility rate is relatively high.

Turkey is a tobacco-producing country, whose domestic cigarette consumption at approximately 93 billion cigarettes per year.¹ Per capita consumption of manufactured cigarettes shows a rising trend with an average annual increase of 1% between 1990 and 1995, from 77 314 to 93 000 metric tons.^{1 2}

Turkey has been one of the major markets targeted by the international cigarette industry. Although Turkey is one of the major producers of manufactured cigarettes, the share of foreign companies in Turkey's domestic market has increased considerably in the past decade. This is a consequence of the invalidation of the Turkish national monopoly (TEKEL) in 1986, which resulted in the liberalisation of the tobacco industry and trade in 1991. These changes brought the two largest multinational companies—Philip Morris and Reynolds Tobacco International—into the Turkish tobacco market. Under the umbrella of trade liberalisation and direct foreign investment, multinationals have aggressively entered the Turkish market. Philip Morris, for example, established a \$400 million plant in Turkey, and sold more cigarettes there than it did in countries such as France and Japan.³ This increased the market share of American-blended cigarettes from 2.4% to 51.9% between 1984 and 1997. In addition, a shift in consumer preference for foreign brand cigarettes occurred, and foreign brands accounted for 31 of every 100 packs of cigarettes consumed in Turkey in 1997.⁴ By 1997, the number of transnational tobacco companies in Turkey reached three with the entry of the British American Tobacco Company (BAT), which took over the local cigarette factory of Samsun,

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Table 1 Cigarette smoking status, by age and gender

Age (years)	Boys		Girls		Total n
	Never-smoker n (%) [*]	Ever-smoker n (%) [*]	Never-smoker n (%) [*]	Ever-smoker n (%) [*]	
≤8†	68 (77)	20 (23)	79 (83)	16 (17)	183
9	134 (87)	20 (13)	129 (93)	10 (7)	293
10	138 (86)	22 (14)	114 (92)	10 (8)	284
≥11	149 (90)	17 (10)	99 (94)	6 (6)	271
Total	489 (86)	79 (14)‡	421 (91)	42 (9)	1031

^{*}Row percentages.

† $\chi^2 = 14.5$, $p < 0.05$, ≤8 years of age vs ≥9 years of age.

‡ $\chi^2 = 5.79$, $p < 0.05$ (boys vs girls).

Table 2 Brand and logo recognition rates, by gender

	Boys		Girls	
	n	%	n	%
Foods				
Milka brand	478	89.1	862	88.0
Milka logo	382	71.0*	276	61.9*
Chee-tos brand	318	58.7	244	57.2
Uzay logo	480	87.4*	354	80.9*
McDonald's logo	377	67.3	279	63.4
Cigarettes				
Samsun brand	519	96.4	376	93.9
Samsun logo	460	83.4*	355	78.2*
Camel brand	482	89.8*	322	77.6*
Camel logo	508	92.7*	392	88.5*
Marlboro brand	492	92.7	402	91.9
Marlboro logo	396	73.2*	287	65.6*
Drinks				
Tuborg brand	461	87.2*	316	73.5*
Tuborg logo	458	84.5*	319	73.7*
Coke logo	495	89.0*	374	81.4*
Others				
Colgate brand	413	79.1	307	74.4
Colgate logo	465	85.0	363	82.3

*p<0.05.

which is located in the city of Akhisar in Western Turkey.

In Turkey, smoking prevalence among the adult population (above 15 years of age) is 62.8% in men and 24.8% in women,⁵ higher than the average prevalence in developing and developed countries. The age of smoking initiation is considerably lower in Turkey. About 13.2% of those aged 15–18 years are smokers.⁵ Although reliable epidemiological data are lacking, a steady increase in lung cancer mortality was reported in both sexes from 1965 to 1990. Forty per cent of cancer deaths in men and 15% in women were due to lung cancer in 1992.⁶ These figures make tobacco an important public health issue in Turkey.

Despite the high prevalence of smoking and the health-related economic burden, until November 1996 there had been no comprehensive legislation to combat the overwhelming smoking epidemic in Turkey. Both children and adults were exposed to tobacco advertising. Cigarettes were advertised mainly through billboards (for example, those featuring the Marlboro cowboy), print media (posters, magazines), broadcast media (movies, private television programmes supported by Parliament Cinema Club, jazz concerts organised as part of the annual "Parliament Jazz Festival"), and promotions in school canteens. Children have been shown to recall, admire, discuss, and generally relate to cigarette advertising in the same manner as do adults.⁷

This study was conducted to assess the extent to which the above factors influence smoking behaviour among young people in

Turkey (before adoption of tobacco control legislation) and their ability to recognise brand names and logos of widely advertised cigarettes, compared with other commercial products intended for children.

Methods

STUDY POPULATION

The study was performed in January and February 1996, before smoking legislation went into effect on 7 November 1996.⁸ The sample population consisted of 1093 children, among whom 579 (55.6%) were boys and 485 (44.4%) were girls. The children were in grades 2–5, and had a mean age of 10 years (range = 7–13, SD = 1). The ages corresponding to these grades were: 7–8 years old, grade 2; 9 years old, grade 3; 10 years old, grade 4; and 11–13 years old, grade 5.

The study sample was drawn from three primary schools—one school in each of three different residential districts representing the three socioeconomic classes (high, middle, and low income). The catchment area of the low income district was one of the squatter regions of Ankara (Hüseyin Gazi); that of the middle income district was located in the urban area of Ankara (Bahçelievler), and the primary school representing the high income district was located in our university campus (Beytepe). The first two were public schools where registration is limited to inhabitants of the surrounding neighbourhood, while the third is a private school. The study group consisted of all students who attended class at the time of the survey.

STUDY DESIGN

This study used a cross-sectional, questionnaire-based survey. After students were informed of the anonymity of the survey, the questionnaire was administered to them in their classrooms under the supervision of a researcher and their teachers. The questionnaire was a translation and modification of a previously used questionnaire,⁹ which included multiple-choice questions related to current smoking status; self-purchase of cigarettes in the week before administration of the questionnaire; knowledge of and attitudes toward the smoking behaviour of their parents, teachers, and the public; and parents' smoking status.

The children were also asked to classify nine logos and seven brand names of different commercial products: domestic and foreign cigarettes, toothpaste, food, beer, and soft drinks. The brand names were Milka (a food), Samsun (a Turkish cigarette brand), Chee-tos (a food), Camel, Colgate, Tuborg (a beer), and Marlboro. The advertising logos shown to the children—which represented Tuborg, Marlboro (red chevron), McDonald's, Camel (traditional camel on the cigarette package), Colgate, Uzay (Turkish logo representing Chee-tos), Coca Cola (Coke), Milka, and Samsun Illustrations—are reproduced in the appendix.

Responses to these brand names and logos were classified into five categories according to

Table 3 Factors affecting recognition of cigarette brand names—adjusted odds ratios and 95% confidence intervals (CI)

Category/variable	All correct	95% CI	2 of 3 correct	95% CI
Age (per year)	1.73	1.52–1.99	1.70	1.44–2.01
Gender (male)	1.79	1.34–2.40	0.89	0.62–1.28
Smoking (ever)	0.78	0.50–1.22	0.84	0.50–1.42
Parents' smoking (ever)	0.98	0.86–1.12	1.0	0.31–1.18
School districts				
Middle income	4.87	3.39–6.95	4.61	3.06–6.95
High income	7.10	4.82–10.44	7.09	4.46–11.0

Table 4 Brand and logo recognition rates, by smoking status

	Never-smokers		Ever-smokers		Unadjusted	
	n	%	n	%	OR	95% CI
Brands						
Milka	805	88.8	91	84.6	0.69	0.36–1.34
Samsun	820	95.2	98	95.9	1.17	0.39–3.96
Chee-tos	805	58.4	100	56.0	0.91	0.58–1.41
Camel	795	84.4	97	80.4	0.76	0.43–1.35
Colgate	790	78.5	92	65.2	0.51	0.32–0.84
Tuborg	802	81.2	91	83.5	1.18	0.64–2.20
Marlboro	799	92.1	99	88.9	0.68	0.33–1.43
Logos						
Tuborg	802	79.8	91	79.1	0.96	0.55–1.70
Marlboro	799	68.6	99	75.8	1.43	0.86–2.39
McDonald's	836	66.0	107	58.9	0.74	0.48–1.13
Camel	795	91.4	97	85.6	0.57	0.30–1.11
Colgate	790	84.9	92	72.8	0.48	0.28–0.81
Uzay	805	84.5	100	85.0	1.04	0.57–1.95
Coke	836	85.5	107	85.9	1.04	0.56–1.93
Milka	805	66.2	91	70.3	1.21	0.74–2.00
Samsun	820	81.2	98	81.6	1.03	0.58–1.83

OR = odds ratios; CI = confidence intervals.

the products they represented: food, cigarette, drink, other, and not known. All the brand names tested were represented by their coloured logos. The sample logos were reproduced from the packages of the products in question. The logos representing Camel,



Figure 1 Examples of tobacco advertisements in Turkey before passage of legislation in 1996 banning tobacco advertising and promotion.

Marlboro, Samsun, Milka, Coca Cola, and Chee-tos did not contain the brand names of the products. The advertised brand names and the logos were given in print form in the second page of the questionnaire (opposite). Pilot testing of the questionnaire was done to ensure that questions were clear, and to verify the validity and reliability of self-reported cigarette smoking.

ANALYSIS

Smoking status of the children was determined by one of the following four possible answers, as in a previous study⁷: (1) never smoked; (2) tried smoking once or a few times; (3) smokes sometimes, less than one cigarette a week; and (4) smokes one or more cigarettes a week. The child's smoking status was defined as never-smoker (answer 1) or ever-smoker (answer 2, 3, or 4). Despite the availability of disaggregated data for the four defined smoking-status categories, the analysis was dichotomous (never/ever) to render it comparable with similar studies—for example, one in China.⁹

Brand identification was assessed by summing up all the correct answers, including the identification of brand names and logos in each product category.

The overall analysis was conducted using the SPSS statistical software. χ^2 and variance analyses were used to determine the significance between the groups. Logistic regression analysis was used to determine the importance of factors affecting recognition of cigarette brand names. Statistical significance was defined as $p < 0.05$.

Results

In the group of 1093 students, 1031 (94.4%) completed the questionnaires (62 who failed to indicate their gender and smoking status were excluded). Prevalence of ever-smoking was 11.7% overall (13.9% among boys and 9.1% among girls; $\chi^2 = 5.76$, $p < 0.05$) (table 1). The highest prevalence of ever-smoking (19.6%, 36/183) was observed in the age group of eight years or less (most of whom were in grade 2). There was no significant difference in smoking prevalence across the three residential districts included in the study ($\chi^2 = 2.69$, $p > 0.05$); in other words, socioeconomic class did not appear to affect smoking prevalence.

Twenty-four per cent (245/1022) of the students reported buying cigarettes during the week preceding the study. Ever-smoking children (49.1%, 59/120) were more likely to have bought cigarettes than never-smokers (20.6%, 186/902) ($\chi^2 = 47.3$, $p < 0.0001$).

Sixty-six per cent (710/1080) of respondents reported that at least one of their parents was a smoker. Smoking was more prevalent among children with a parent who had smoked (15.3%) as compared with children of non-smoking parents (4.8%) ($\chi^2 = 24.67$, $p < 0.0001$). Smoking was less common among children whose fathers were healthcare practitioners (2.5%, 1/40) in comparison with those whose fathers were self-employed, officials, or manual workers ($\chi^2 = 7.88$, $p < 0.05$).

Please indicate to which products the brands and logos below correspond
(put an X in the box below the appropriate product)

	Food	Cigarette	Drink	Other	Not known
1. MILKA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. SAMSUN	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. CHEE. TOS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. CAMEL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. COLGATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. TUBORG	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. MARLBORO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Illustrations shown to the children as the second part of the questionnaire.



Figure 2 Store front signs for Camel and Marlboro cigarettes displayed after adoption of legislation in 1996 banning tobacco advertising and promotion.

There was no significant difference in smoking behaviour between children whose parents smoked domestic cigarettes and those whose parents smoked foreign brands ($\chi^2 = 3.79$, $p > 0.05$). Of the 118 ever-smoking children, 89 (75.4%) were against their parents' smoking.

Most children (68.6%) stated that they had not been taught in school about the adverse health effects of smoking. A majority (81.2%) believed that smoking should be prohibited in public places, and this opinion did not differ significantly according to smoking status.



Figure 3 Indirect advertising appearing after the ban on tobacco advertising, in the form of news stories about the Marlboro-sponsored Turkish rally team and the Camel Adventure Tour.

The total mean scores for recognition of all brand names and logos differed significantly by sex (11.2 for boys vs 10.4 for girls, $F = 11.83$, $p < 0.001$). Brand recognition ranged from 58.1% for Chee-tos (a food) to 95.2% for Samsun (a domestic cigarette brand) (table 2). Recognition rates for cigarette brand names and logos were 95.2% and 80.8%, respectively, for Samsun; 84.0% and 90.5%, respectively, for Camel; and 92.1% and 69.5%, respectively, for Marlboro. The Camel logo and the Samsun and Marlboro brand names were the most highly recognised of all product logos and brand names tested (table 2).

After adjustment for age, gender, parental smoking, and residential district, higher brand recognition rates for cigarettes were strongly associated with older age (odds ratio (OR) = 1.73; 95% confidence interval (CI) = 1.52 to 1.99) and male gender (OR = 1.79; 95% CI = 1.34 to 2.40). Pupils from the middle and high income districts were more likely to recognise all cigarette brands (OR = 4.87 (95% CI = 3.39 to 6.95) for middle income; OR = 7.10 (95% CI = 4.82 to 10.44) for high income) (table 3).

Never-smokers were more likely than ever-smokers to recognise the brand name and logo of Colgate. There were no significant differences in recognition rate for the other products according to smoking status (table 4).

Discussion

We found a prevalence of ever-smoking of 11.7% among the children in this study (13.9% in boys and 9.1% in girls). Similar rates have been reported for the same age group in earlier studies. In 1983, smoking prevalence among secondary school and high school students in Ankara was reported to be 9% and 38%, respectively.¹⁰ In 1990, Tümerdem *et al*¹¹ reported a smoking prevalence of 10% in boys and 7% in girls in primary school (grades 3–5) in the outskirts of Istanbul.

These figures are similar to those reported by Peters *et al*⁹ for Hong Kong; they found the prevalence of ever-smoking to be 11% (15% in boys and 7% in girls) for children of the same age group. In a study conducted in England in 1994, the prevalence of regular smoking among children aged 11 to 15 was 12% (10% in boys and 13% in girls); however, the prevalence of ever-smoking was much higher—47% in boys and 48% in girls.¹²

If a comparison is made with industrialised countries, the situation in Turkey would correspond to the first cycle of the S-shaped diffusion curve.¹³ This means that none of the groups (men, women, boys, or girls) has entered the second cycle—that is, adopting non-smoking.

In our study, the male-to-female ratio for smoking prevalence was 1.5. A 1988 study in Istanbul, in an urban population over 18 years of age, found a smoking prevalence of 54.5% for men and 32.9% for women (male-to-female ratio = 1.6).¹⁴ These figures suggest that women in large cities are more likely to smoke. Bilir *et al*¹⁵ reported an even higher prevalence of current smoking among women in Ankara—37%. We believe that introduction of Western-style cigarettes may have resulted in a higher smoking rate among women.

The tobacco industry supports cultural and sporting activities to stimulate smoking among adolescents and children, especially in developing countries. This has also been the case in Turkey. Before the adoption of national tobacco control legislation in 1996,⁸ tobacco advertising was permitted freely in Turkey with the exception of national radio and television channels (figure 1). Nowadays the most common types of marketing by Philip Morris and RJ Reynolds are price announcements for cigarettes in newspapers, and illegal cigarette promotions in bars and restaurants. In addition, indirect advertising occurs on store fronts and through sponsorships (figures 2 and 3).

Despite the fact that of every 100 packets of cigarettes sold in Turkey, one is Camel and six are Marlboro, while 20 are Samsun (which has been taken over by BAT), the recognition rate for Camel and Marlboro is almost as high as that of the domestic brand. This suggests that the transnational companies are more successful in their advertising. Despite the fact that Camel's "Old Joe" cartoon character has not been promoted heavily in Turkey, the Camel logo had the highest recognition rate among the tested cigarettes logos (90.5%). This figure approaches the 93.6% one reported for the United States.¹⁶

Our study provides evidence that the smoking status of parents has an effect on the smoking behaviour of their children, consistent with the findings of other investigators.^{13 17}

During the week preceding our survey, 24% of all students reported having bought cigarettes. This proportion is higher than the prevalence of ever-smoking (11.7%) in our study sample. The difference is likely due to the fact that children (including non-smokers) commonly buy cigarettes for their parents or teachers. Because the sale of tobacco products to minors was not prohibited before passage of tobacco control legislation in 1996, children had greater access to cigarettes during the period of our study than they do now.

In other countries smoking prevalence among the young generally increases with increasing age.^{18 19} However, our study found, alarmingly, that those aged eight years and younger had the highest prevalence of

ever-smoking. Our findings are consistent with those of Bilir *et al*,¹⁵ who showed that 13% of current smokers under the age of 20 started smoking before 11 years of age. They also found that 60% of the smokers over 50 years of age reported that they started smoking at the age of 21 or above. This demonstrates that the age of smoking initiation has shifted downward towards the age of 10 in Turkey. A number of factors may have contributed to this trend, but the primary cause may have been an increase in the legitimisation of smoking.

In this study, parental smoking was found to be relatively high (66% of respondents reported having at least one smoking parent). In addition to parental role modelling, the very high smoking rates among teachers (51%), journalists (64%), artists (46%), physicians (51%), and sportsmen (35%) may be influencing children to start smoking.¹⁵ Even in calendars or on television, it is not uncommon to see photographs showing smoking by Atatürk (the founder of modern Turkey) or by famous politicians, providing children with another source of positive images for smoking.

Contrary to other studies,^{9 20} our study showed no difference in the recognition rates for cigarette brand names according to smoking status. Cigarette brand identification was mostly related to socioeconomic level; that is, the higher the income, the higher the recognition rate. This could be attributed to more intense exposure of children to tobacco advertising and promotion in communities at higher socioeconomic levels.

Despite the frequent advertising of Colgate, the recognition rate for the Colgate logo was behind that for the Camel and Coke logos. This may be due to the relatively uncommon usage of toothpaste in the homes of children participating in our study. A recent survey in Turkey showed that toothpaste has never been used in 30% of all homes.²¹

It has been 11 years since McDonald's was introduced in Turkey.²² The number of McDonald's restaurants has reached 83. However, the logo was the least recognised among all of the logos used in the study. This could be caused by ineffective advertising or lower consumption of "fast food" among children of primary school age in Turkey. It seems that cultural factors continue to have a strong influence on eating habits at home in Turkey.

A law that was meant to ban cigarette advertising was not put into practice because of disapproval by the former president, who argued that it was against the principles of free trade. The World Health Organisation, however, has advocated a ban on tobacco advertising and promotion.²³ Banning all forms of tobacco advertising and forbidding the sale of tobacco products to children in Turkey should be seriously considered as part of a smoking prevention policy. Despite the existence of a law which totally bans all types of advertising and promotion,⁸ tobacco companies are constantly finding ways to circumvent the law through indirect cigarette advertising. As noted above, examples include cigarette signs on store fronts, news reports about the Camel

Adventure Tour and the Turkish rally team supported by Marlboro, and cigarette price announcements in the print media (figures 2 and 3).

The health warning currently required on cigarette packets dates back to 1986: "Smoking is harmful to your health".⁸ More effective, rotating health warnings are needed. In addition, the toxicity of existing brands needs to be reduced; currently, most of the domestic brands have a tar yield exceeding 25 mg per cigarette.²⁴

The anti-smoking campaign has begun in Turkey. However, considerable progress remains to be made, especially in reducing or eliminating smoking in public spaces. The success of the campaign will depend heavily on the global approach towards this issue, and on control of international cigarette trade.

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