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around high schools in Greece during the 2012 economic
crisis**

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Price promotions and marketing within points of sale around high schools in Greece during the 2012 economic crisis

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ABSTRACT

INTRODUCTION Price promotions within points of sale (POS) are a significant risk factor for smoking initiation and pro-smoking beliefs among adolescents. The aim of the present study was to assess the quantity and types of tobacco advertisements and price promotions within POS located around schools (<300 m) in two major cities in Greece during the period of economic crisis (2011-2012).

METHODS POS that were within close proximity (<300m) to high schools in the cities of Heraklion and Thessaloniki, Greece was assessed with the use of Google Maps and on foot surveillance, while indoor and outdoor advertising characteristics were assessed within each POS. A total of 226 POS were identified around the 23 schools assessed in the two cities (n=13 in Heraklion and n=10 in Thessaloniki).

RESULTS On average there were 10 POS around each school, with one in eight POS directly visible from school gates. Advertising was more common inside than outside and price promotions were also more frequent indoors. British American Tobacco and Philip Morris International were responsible for >60% of outdoor price promotions.

CONCLUSIONS Price promotions were noted within the majority of POS close to schools. Aggressive promotional activities may hinder efforts to de-normalize tobacco use, especially during financial crisis when price promotions may pose as more attractive to potential consumers.

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KEY WORDS

tobacco advertisements, school, POS, cigarette price promotions, financial crisis

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INTRODUCTION

Tobacco use is a major risk factor for NCDs (e.g., cancer, respiratory disease, and cardiovascular diseases) and the 'seductive allure' of price incentives may run counter to effective tobacco control policies and reduce their impact on tobacco consumption trends. Recent reports indicate that the burden of NCDs is expected to increase sharply within the next two decades. This effect will be exacerbated by the ongoing financial crisis, especially in low and middle-income countries, as well as in countries that were mostly affected by the crisis, such as Greece¹. In order to reduce the burden of NCDs it is important to maintain effective tobacco control policies and eliminate the tobacco industry practices that potentially undermine them^{2,3}.

Tobacco industry advertising in Greece was rampant prior to the adoption of a nationwide outdoor advertising ban in 2009, which led to the eradication of billboard advertising and an overall reduction in tobacco advertising, despite the loophole that permitted outdoor advertisements on areas that are covered by a roof^{4,5}. In the context of the above advertisements often contain price promotions, provided to the retail seller directly

from the industry (retailers are not allowed to change the price or provide discounts). Providing price promotions for tobacco products within POS is related to smoking initiation in adolescence as well as with transitions from experimentation to regular smoking status⁶. Price promotions in POS may counteract the effects of increased taxation and economic crisis on tobacco demand and consumption, and make tobacco products more attractive to consumers who are price sensitive. Nevertheless, there are no empirical studies to assess price incentives and related marketing strategies in POS within the context of an economic crisis, as we hypothesized that price incentives within POS advertising may be utilized as a means of approaching and catching the attention of price conscious consumers. Therefore, the aim of the present study was to provide a cross sectional overview of POS advertising within close proximity to schools within two large cities in Greece (Heraklion and Thessaloniki), and to evaluate the use of price incentives and specific brand marketing amidst the national economic crisis noted within Greece in late 2011 and early 2012.

METHODS

Study Design and Sampling

During November 2011 and early 2012, POS (kiosks, mini markets or industry owned shops) within close proximity (<300m) to high schools (gymnasium schools with ages 13-15), within Heraklion (n=13) and Thessaloniki (n=10) were assessed. These two cities represent the 2nd and 4th largest cities in Greece and are located in Southern and Northern Greece, respectively. A detailed analysis of the methodological approach and study design are provided elsewhere⁵. However, in short, a researcher starting from the school gates visited all POS in the streets located within a 300m Euclidian radius from the school gate plotted through Google Earth. Within this radius the researcher would document tobacco advertising, price promotions and price incentives both outside and inside each POS. A total of 226 POS were identified within the catchment areas and were regarded as our study sample. Within each POS the following were recorded:

1. The location and distance from the school gate;
2. The existence and number count of outdoor and indoor advertisements;
3. Whether the advertisements were illuminated or mechanical (e.g. moving or spinning);
4. Whether there were advertisements under 1m from the ground (at a child’s eye height);
5. Whether there were functional promotional objects (e.g. money trays or gantries, display units;
6. The existence and number of price promotions and
7. Brand specific advertising. Grey advertising was also noted and defined as the indoor or outdoor painting of convenience stores or kiosks is specific cigarette brand colors without mentioning brand names. While no human subjects were engaged, ethics approval for the study was obtained from the Scientific Committee/ Institutional Review Board (IRB) of the University Hospital of Crete.

Statistical Analysis

Analysis of frequencies was used to assess the marketing activities of different brands with regard to available price promotions both inside and outside the points of sale. The Chi-square test was used to assess categorical variables and t-tests for the number of advertisements, as a continuous variable (Mean (SD) are presented). All analyses are based on two sided tests, with statistical significance noted at p<0.05. The statistical analysis was performed using the statistical package PASW 19.0.

RESULTS

The data collected for this study indicate that at the time of data collection (November 2011) there were 226 POS located within 300m of all the selected schools; 120 POS were located around

Table 1. Tobacco advertising within close proximity to schools in Greece in 2012

	Heraklion % (N)	Thessaloniki % (N)	Both % (N)	P value
Type of store	47.2 (50)	59.2 (71)	53.5 (121)	
Kiosk	46.2 (49)	22.5 (27)	33.6 (76)	
Convenience store				
Tobacco Ind. owned	6.6 (7)	18.3 (22)	12.8 (29)	<0.001
School visible from POP	83.0 (88)	87.5 (105)	85.4 (193)	
No	17.0 (18)	12.5 (15)	14.6 (33)	0.353
Yes				
Outdoor ads?	34.0 (36)	26.7 (32)	30.1 (68)	
No	66.0 (70)	73.3 (88)	69.9 (158)	0.248
Yes				
Outdoor price promotion	50.9 (54)	38.3 (46)	44.2 (100)	
No	49.1 (52)	61.7 (74)	55.8 (126)	0.038
Yes				
Grey advertising	90.6 (96)	65.8 (79)	77.4 (175)	
No	9.4 (10)	34.2 (41)	22.6 (51)	<0.001
Yes				
Indoor ads	16.3 (8)	25.9 (7)	19.7 (15)	
No	83.7 (41)	74.1 (20)	80.3 (61)	0.372
Yes				
Indoor price promotions	28.6 (14)	37.0 (10)	31.6 (24)	
No	71.4 (35)	63.0 (17)	68.4 (52)	0.454
Yes				

Chi-square tests. All analyses are based on two sided tests, with statistical significance noted at p<0.05

Table 2. Overview of industry advertising within close proximity to schools in two cities in Greece, 2012

	Heraklion		Thessaloniki			
	Range (Min -Max)	Mean(SD)	Range (Min -Max)	Mean(SD)	Range (Min -Max)	Mean(SD)
Outdoor advertising						
Total number	0-16	3.93(4.52)	0-14	3.87(3.59)	0-16	3.90(4.04)
Ads seen from street	0-16	2.66(3.87)	0-10	2.08(3.11)	0-16	2.35(3.49)
Ads on the door	0-9	0.31(1.19)	0-8	0.07(0.73)	0-9	0.18(0.98)
Illuminated ads	0-12	0.50(1.47)	0-9	1.25(2.49)	0-12	0.90(2.10)
Mechanical ads	0-2	0.02(0.21)	0-2	0.05(0.26)	0-2	0.04(0.24)
Ads under 1m	0-6	0.32(0.96)	0-6	0.29(0.83)	0-6	0.30(0.89)
External price promotions	0-11	1.89(2.57)	0-7	1.47(1.60)	0-11	1.67(2.12)
Indoor advertising						
Total number of ads	0-15	4.41(3.86)	0-9	2.74(2.49)	0-15	3.82(3.52)
Number of illuminated ads	0-4	0.46(0.84)	0-1	0.03(0.19)	0-4	0.31(0.71)
Number of mechanical ads	0-1	0.08(0.27)	0-2	0.11(0.42)	0-2	0.09(0.33)
Number of ads child eye	0-5	0.77(1.40)	0-1	0.07(0.26)	0-5	0.52(1.18)
Number of storage areas with logo or brand colors	0-1	0.71(0.45)	0-0	0(0)	0-1	0.46(0.50)
Number display cases with logo or brand colors	0-3	0.36(0.66)	0-1	0.03(0.19)	0-3	0.25(0.56)
Number of functional objects	0-2	0.33(0.55)	0-3	0.48(0.80)	0-3	0.38(0.65)
Number of price promotions	0-7	2.16(1.89)	0-5	1.31(1.40)	0-7	1.86(1.78)

Table 3. Percentage of internal and external price promotions by Tobacco Company, within 300m of high schools in Greece in early 2012

Tobacco Company	Thessaloniki	Heraklion
Indoor price promotions		
British American Tobacco	36.4%	42.2%
Papastratos - Philip Morris International	30.3%	19.2%
Imperial Tobacco	18.2%	15.6%
Japan Tobacco International	15.1%	13.7%
Karelia Tobacco Company	0.0	3.6%
Greek Cooperative Cigarette Manufacturing Company (SEKAP)	0.0	1.8%
Other brands	0.0	3.7%
Outdoor price promotions		
British American Tobacco	47.6%	36.5%
Papastratos - Philip Morris International	23.5%	8.9%
Imperial Tobacco	14.7%	16.0%
Japan Tobacco International	12.9%	22.5%
Karelia Tobacco Company	0.0	1.0%
Greek Cooperative Cigarette Manufacturing Company (SEKAP)	1.2%	1.0%
Other brands	0.0	6.0%

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the schools in Thessaloniki and 106 in Heraklion. On average, there were 10 POS around each school. However, the range varied with POS around schools in Thessaloniki ranging between 5 and 51 (average = 12) and in Heraklion between 3 and 18 (average = 8). Additionally, 17.0% of Heraklion's and 12.5% of Thessaloniki's POS were visible from the school gate.

Regional analysis of price promotions

Outdoor advertising was present in 70% of POS, with 56% identified to have outdoor price promotions (Table 1). Compared to Heraklion, retailers in Thessaloniki displayed a higher percentage of outdoor price promotions (49.1%, vs. 61.7%, $p=0.038$), and more grey advertising (9.4% vs. 34.2%, $p<0.001$). Indoor advertising was present in 80% of POS, while 68% also displayed indoor price promotions. As for indoor advertisements there were no significant differences between Thessaloniki and Heraklion. An overview of advertising activities including their positioning and characteristics within the POS in both cities is depicted in Table 2.

Evaluation of tobacco price promotions by brand

Four brands emerged as the most advertised both in Thessaloniki and Heraklion in early 2012: Lucky Strike (32.2% of all documented price promotions), Marlboro, West, and Camel all had significant shares in price promotions at POS. The aggregated use of price incentives by each tobacco company active in these two cities is depicted in Table 3. British American Tobacco (BAT) -which produces Lucky Strike- was the company with the largest percentage of price promotion advertisements, with 47.6% and 36.5% of outdoor price and 36.6% and 42.2% of all indoor price promotions in Thessaloniki and Heraklion respectively. Philip Morris International (PMI) -which produces Marlboro- was also found to have a significant share of indoor price promotions (30.3% in Thessaloniki and 19.2% in Heraklion), and to a smaller extent outdoor promotions (23.5% in Thessaloniki and 8.9% in Heraklion). Other companies such as Imperial tobacco and Japan Tobacco International (JTI) held smaller percentages of price promotion advertisements. Karelia and SEKAP, the two national tobacco companies, held under 5% of outdoor and 1% of indoor price promotion advertisements, indicating the dominance of the multinational tobacco industry within price promotion advertisements near schools in these two cities.

DISCUSSION

The results of this study clearly indicate that even after the implementation of the outdoor tobacco advertising restriction that eliminated billboards, adolescents in Greece are still exposed

to tobacco advertisements and promotions near their schools. Notably, more than half of the measured POS within close proximity to schools displayed outdoor cigarette price promotions an alarming fact, especially in light of the current austerity measures within Greece. With regard to documented price promotions by brand, the results reveal that Lucky Strike was most heavily marketed cigarette brand, both on the inside and outside POS, followed by Marlboro, Camel, and West. Moreover, the most active tobacco companies in using POS advertising were PMI and BAT with the latter responsible for almost half of the outdoor price promotions near schools in the selected cities in Greece.

On-going tobacco control activities which included the aforementioned advertising restriction, educational interventions, limited media campaigns and clean indoor air regulations, cigarette prices have also gradually increased due to specific tax increases implemented in 2009, 2010 and 2011⁹. In coherence with the restrictions in advertising, the repeated tax increases and additionally supported by the growing economic crisis, cigarette consumption and prevalence has notably dropped during the past 4 years, especially among younger age groups¹⁰.

Recent cross sectional studies in Greece have calculated the prevalence of smoking among 13-15 year olds to be at 8%, with adolescents exposed to promotion activities of the tobacco industry identified to be 3.7 times more likely to be smokers than those not exposed to tobacco industry advertising¹¹. The findings of our study clearly indicate that adolescent smoking in Greece could also be 'socially cued' as there are several cues to action (outdoor tobacco advertisements, price incentives) in POS around schools that may play a role in urging young people to experiment or initiate smoking, as outdoor cigarette price promotions may be even more appealing to young people who are price sensitive¹².

Unless regulated by more strict measures, POS advertisement in Greece may remain a risk factor for smoking initiation and continuation in youth¹³⁻¹⁵. It appears that kiosks, which are widely common in Greece, are strategically used by the tobacco industry for promotion and advertisement of tobacco products. Furthermore, price incentives may be used as a powerful tool to counterbalance for the effects of economic recession and increased tobacco taxation – both of which currently exist in Greece – therefore it is imperative for policy makers to identify at the outset if the tobacco industry is using price incentives strategically to recruit novice smokers or retain their clientele^{7,16}. The findings of this study are a call for immediate action as such tobacco industry marketing strategies further undermine public health efforts to reduce the burden of non-communicable diseases (NCDs).

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Strengths and limitations

The study is not free of limitations. First of all, more cities could be used to provide more accurate country-specific data. Nevertheless, our intention was to assess tobacco industry marketing strategies, and more specifically price incentives, in POS around schools in two large Greek cities, and not to conduct a nation-wide project. Our findings provide the methodology and the framework for such a study at a national or international level. Notwithstanding these limitations, the study had several strengths. In particular, it is the first study that presents findings on price incentives and tobacco advertising strategies within the context of the economic crisis.

CONCLUSIONS

Our study shows that tobacco use among youth in Greece may also be 'socially cued' through extensive exposure to tobacco industry advertising. Moreover, it is worth noting that amidst the 2011-2012 economic crisis, a substantial percentage of POS displayed price promotions as an incentive to purchase tobacco. These promotional activities through POS may hinder national efforts to de-normalize tobacco use in young people. This may be even more so in times of economic crisis where price incentives and offers may pose as more attractive to potential consumers, thus warranting the need to evaluate, and potentially restrict POS advertising in Greece, as well as in other countries hit by the crisis where a high burden from non-communicable diseases is expected.

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CONFLICT OF INTEREST

The authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none were reported.

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