

BRAND AWARENESS AND ACCESS TO CIGARETTES AMONG CHILDREN 8–12 YEARS OLD IN THE CZECH REPUBLIC

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SUMMARY

Objective: The aim of the study is to assess smoking behaviour, knowledge of cigarette brands and access to cigarettes among children 8–12 years old in the Czech Republic.

Method: Between 2009 and 2012, a cross sectional survey was conducted among 4,439 children aged 8–12 years attending 51 primary schools in Prague and Central Bohemia, Czech Republic. Data including age, gender, ever smoking, parental and sibling smoking, knowledge of cigarette brands, sources of cigarettes, and smoking frequency were collected.

Results: Fifty nine percent of all children could name one or more cigarette brands, 62.8% of boys and 55.3% of girls ($p < 0.01$). The most well-known brands were Marlboro and the local brand Petra. Marlboro was better known among boys, while Petra was more known among girls. Children whose parents smoke showed higher brand awareness than children with non-smoking parents, 72.5% and 45.6%, respectively ($p < 0.001$), and 76.4% of children reported one or more possible sources where to obtain cigarettes. Nearly one quarter (23.3%) of children had ever tried cigarettes, water pipe, cigars, or marijuana. Nearly half of all children (43.1%) reported that they had obtained their first cigarette from a relative or at home, and the second most frequent source were their peers (22.8%). Only 3.9% of children reported that they had purchased their first cigarettes. Relatives were the main source of cigarettes among children that reported smoking more than once.

Conclusions: The high level of cigarette brand awareness and ever smoking provide evidence that tobacco control policies in the Czech Republic do not adequately protect children. Tougher legislation and effective strategies in accordance with the WHO Framework Convention on Tobacco Control are therefore required to better protect children from harmful effects of smoking and the influence of tobacco industry in the Czech Republic.

Key words: tobacco control, children, brand awareness, access to cigarettes

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INTRODUCTION

Tobacco use is responsible for nearly 6 million deaths every year and represents high economic and social burden for society (1). Nearly all smokers start smoking before the age of 18 years and smoking at an early age is associated with higher smoking frequency in adulthood and a higher risk of tobacco-related diseases (2).

Marketing of tobacco products greatly influences smoking uptake among children and adolescents. Tobacco advertising of any form increases the risk of smoking onset and it is linked to higher awareness of smoking and the use of any brand, regardless of advertising (3, 4). Children and youth are more sensitive to tobacco advertising than adults, this was demonstrated by DiFranza et al. who showed that the cartoon character Old Joe Camel was more effective in promoting Camel cigarettes among children than adults (5). Adolescents smoke the most advertised brands, and brand preferences follow marketing activities (6). Restriction of

tobacco advertising leads to decreased tobacco brand recognition and ever smoking among children (7, 8).

Many countries, including the Czech Republic, have banned tobacco advertising in mass-media and on billboards, however, advertising at point of sale is permitted. Point of sale marketing significantly influences children and increases positive imagery of smoking (9, 10). Package branding also influences children, plain packaging and graphic pictorial health warnings have consistently been shown to decrease the attractiveness of packages and smoking initiation among youth (11, 12). Promotional products such as clothing, sports gear and other items with cigarette brand logos are attractive items for children and youth. Adolescents who obtained these items are more likely to smoke (7, 13). Children and youth also receive positive messages about smoking from television and movies (14).

In addition to aggressive industry marketing, illegal sales of tobacco products to minors is another problem that is difficult to

monitor and police (15). Nevertheless, many children and youth gain access to tobacco products through family members and peers, and may steal cigarettes at home (16, 17). Tobacco control strategies that restrict marketing activities of tobacco companies and enforce legal age limits have been shown to reduce youth smoking (15, 18). Price increases and taxation, as well as creation of smoke free public spaces, reduce opportunities to smoke and have all been shown to decrease smoking among minors (19–21). The Czech Coalition Against Tobacco is a non-government organization involved in a variety of tobacco control initiatives in the Czech Republic. The aim of this study was to describe smoking behaviour, brand awareness and knowledge of possible sources of cigarettes among children aged 8–12 years.

MATERIALS AND METHODS

Study Design

Between 2009 and 2012, a cross-sectional survey was conducted among 4,439 children aged 8–12 years attending 51 primary schools in Prague and Central Bohemia, Czech Republic. The survey was part of a school based smoking prevention programme. All schools agreed to participate in a baseline evaluation survey prior to implementation of the programme.

An anonymous paper pencil questionnaire consisting of 17 questions was administered to pupils in grades 3 through 5 at all participating primary schools. Trained data collection staff from the Czech Coalition Against Tobacco oversaw the implementation of the survey. The children were informed that the survey was completely anonymous and that their participation was voluntary. Children had 15 minutes to complete the survey in their classroom.

Measurement

Data including age, gender, ever smoking, forms of tobacco used, knowledge of cigarette brands, sources of cigarettes, and smoking frequency were collected. In addition to cigarettes, we also asked about other forms of tobacco use including cigars and water-pipe, as well as marijuana. Ever-smoking was defined as smoking any of these products, even just one puff.

To evaluate knowledge of cigarette brands we asked the open-ended question: “What cigarette brands do you know?” Children responded to this question by listing as many brands as they could name. We measured the frequency of each cigarette brand and compared brand knowledge by gender.

To assess awareness of places to obtain cigarettes we asked the close-ended question “Do you know where you can obtain cigarettes?” Children’s knowledge of sources of where they could obtain cigarettes we asked the open-ended question, “Where can you obtain cigarette?” We measured the frequency of the ten most common answers. We explored access to cigarettes by asking, “Where did you obtain your first cigarette?”. We measured the frequency of the most common response (relatives, at home, purchased, and peers). Among children who smoked cigarettes once a month or more, we asked “Where do you obtain cigarettes?” to determine their main source of cigarettes.

Data Analysis

Statistical analysis was performed using Statistica 12 (StatSoft Inc., USA, 2013). All percentages were calculated based on the total number of responses. Statistical analysis was performed using frequency distributions and standard deviations. Pearson Chi-square test was used to verify differences by gender, smoking status of family members, awareness of cigarette brands, sources of cigarettes and the taste of first cigarette. Statistical significance was defined as p -values < 0.05 .

Ethics Approval

Informed consent was not required, as no personal data that could be used to identify the children or their families was collected.

RESULTS

A total of 4,491 children from 51 primary schools completed the survey. Children younger than 8 years ($n = 6$) and older than 12 years ($n = 7$) were excluded, as well as 39 respondents for whom we had no data on age. The final sample included 4,439 children, 48.3% of them were males, mean age 9.6 years ($SD = 1.01$). Among children, 59.0% could name one or more cigarette brands. Brand knowledge was higher among boys than girls, 62.8% vs. 55.3%, respectively ($p < 0.01$, $\chi^2 = 25.69$) (Table 1). The most well known brand was Marlboro and the local brand Petra (made by Philip Morris) (Fig. 1). Marlboro was more frequently stated by boys than girls, 27.1% vs. 17.4%, respectively ($p < 0.001$, $\chi^2 = 59.67$). In contrast, the local brand Petra was more known by girls than boys, 18.7% vs. 15.7%, respectively ($p = 0.008$, $\chi^2 = 7.06$). Other well known brands included the local brand Sparta (Philip Morris) (11.2%), Camel (10.4%), and Moon (9.9%) (Fig. 1). The brand Sparta was more known by boys (14.5%) than girls (8.1%) ($p < 0.001$, $\chi^2 = 45.80$). For other lesser known brands, knowledge was not significantly different by gender.

Children with one or more parents who smoked could name more cigarette brands than children with non-smoking parents, 72.5% vs. 45.6%, respectively ($p < 0.001$, $\chi^2 = 328.80$). Brand knowledge was also higher among children with a sibling who smoked compared to children with non-smoking siblings, 73.2% vs. 56.7%, respectively ($p < 0.001$, $\chi^2 = 50.90$). Knowledge of cigarette brands increased with age. Nearly forty percent of 8 year olds, 49.4% of 9 year olds, 64.8% of 10 year olds, 74.4% of 11 year olds, and 75.9% of 12 year olds could name one or more cigarette brands (Table 1).

Nearly eighty percent of children (79.3%) knew where they could obtain cigarettes; 78.0% of girls and 80.5% of boys ($p = 0.043$, $\chi^2 = 4.09$). In terms of access to cigarettes, 76.4% of children reported one or more possible sources where they could obtain cigarettes. The most frequently named sources by boys and girls were tobacco shops or stores, 43.9% and 30.2%, respectively. Among children, 4.1% reported that they could obtain cigarettes through a merchant of Asian origin. Also at home or through relatives (2.2%), as well as restaurant (1.6%) and peers (1.4%) were all named by children as possible sources to obtain cigarettes (Fig. 2).

Among children 8–12 years old, 23.3% had ever smoked cigarettes, water pipe, cigar or marijuana. Cigarettes were the most

Table 1. Sociodemographic characteristics and knowledge of one or more cigarette brands among children 8–12 years old in the Czech Republic, 2009 to 2012

	n	% total (N = 4,439)	Knowledge of one or more cigarette brand (%)
Total	4,439	100.0	59.0
Gender*			
Boys	2,144	48.3	62.8
Girls	2,295	51.7	55.3
Age of children			
8 years	613	13.8	39.2
9 years	1,289	29.9	49.4
10 years	1,557	35.1	64.8
11 years	893	20.1	74.4
12 years	87	2.0	75.9

*Statistically significant differences between boys and girls ($p < 0.01$, $\chi^2 = 25.69$)

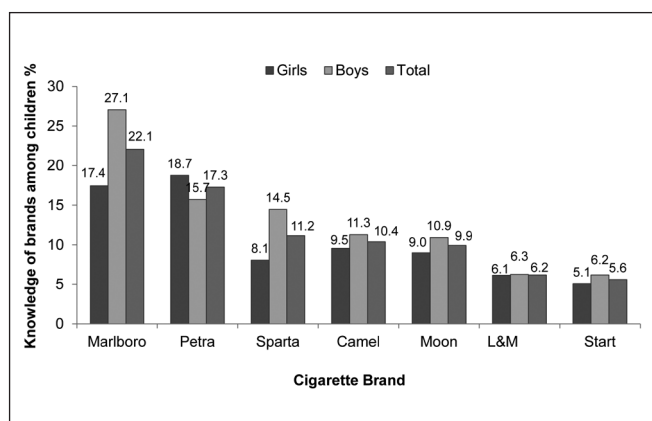


Fig. 1. Knowledge of cigarette brands among children 8–12 years old in the Czech Republic, 2009 to 2012.

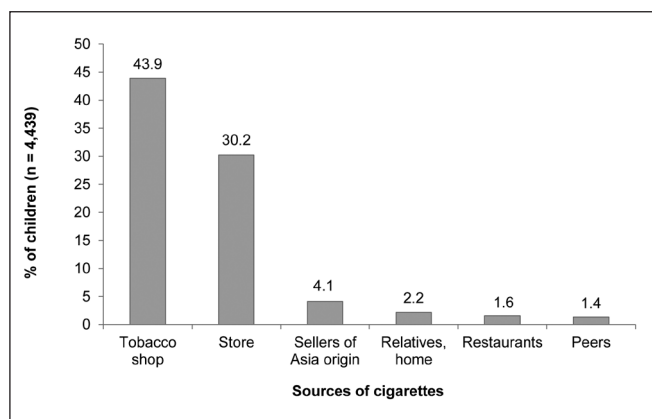


Fig. 2. Sources to obtain cigarettes identified by children 8–12 years old in the Czech Republic, between 2009 to 2012.

popular form of smoking, with 16.7% of all children having ever smoked cigarettes. The most frequent source of the first cigarette among children who had ever smoked ($n = 742$) were either their relatives or other household members (43.1%). Nearly a quarter (22.8%) of children obtained their first cigarette from peers, while 3.9% reported having purchased it.

Among children, 2.3% reported that they smoked at least once a month or more ($n = 103$). Among these children, 32.5% reported that the source of cigarettes were their relatives or friends (24.3%), or they had purchased cigarettes themselves (15.5%). Nearly one-third (27.5%) of all children that had ever smoked cigarettes ($n = 742$) reported that their first cigarette was tasty. This response was significantly higher among boys than girls, 33.2% vs. 19.5%, respectively ($p < 0.001$, $\chi^2 = 15.17$).

DISCUSSION

The aim of this study was to describe smoking behaviour, knowledge of cigarette brands and access to tobacco products among children 8–12 years old in the Czech Republic. Our findings showed that 59.0% of all children could name one or more cigarette brands. In the Czech Republic, advertising of tobacco products on billboards and in mass-media is banned. However, advertising at point of sale is widely used. Children are exposed to point of sale tobacco marketing on a regular basis in shops where food and magazines are sold. Merchants are also permitted to display tobacco advertisements outside of their stores where children may pass on their way to and from school. There are no tobacco control strategies in place to restrict promotion of tobacco products near public spaces frequented by children such as schools and playgrounds.

Among children, the most widely known brands were Marlboro, Petra, Sparta and Camel. These are all well-established brands in the Czech Republic with stable marketing propaganda. While et al. (3) found that awareness of highly advertised brands was associated with a higher risk of smoking onset. Children with parents or siblings who smoked had higher awareness of cigarette brands than children from non-smoking families. Not surprisingly, we found that brand awareness increased with age, which is consistent with the findings of other studies (22).

We also found that girls were more likely to recall Petra than boys. During the time of the data collection, brand Petra was promoting a special Petra Slims collection. The campaign featured the illustration of an elegant lady's belt over the package using the colours pink, violet and light blue. This campaign clearly targeted

females and this may in part explain why girls were more likely to recall this brand than boys. Our findings are consistent with previous studies that have shown that girls are more sensitive than boys to targeted marketing activities for slim cigarettes (23). Promotion of slim cigarettes aimed at women directly influences the onset of smoking. This was demonstrated during the 1960s with the promotion of brands such as Virginia Slim, which were associated with an increased prevalence of smoking among girls and young women in the United States (6, 23).

When asked where they had obtained their first cigarette, most children named relatives or home as the main source. Relatives were the main source of cigarettes for children who smoked once per month or more. Our findings are consistent with those of Zaloudikova et al. in the Czech Republic, who also showed that parents were the source of cigarettes for 11 years old children (24). In the Czech Republic, merchants may request identity card prior to sale of any tobacco products to individuals. There is no exact evidence how many salesperson apply this measure but according to the Global Youth Tobacco Survey (GYTS) about 70% of current smokers aged 13–15 years in the Czech Republic were not refused when they tried to purchase cigarettes (25). Our findings as well as those of others also provide evidence that youth prefer to buy cigarettes from small tobacco shops (26).

The high level of brand awareness, knowledge of possible locations to obtain cigarettes, and ease with which youth can obtain cigarettes suggest that children in the Czech Republic are at increased risk of smoking onset. In order to decrease youth smoking, the Czech Republic must implement evidence-based strategies outlined by the World Health Organization's Framework Convention on Tobacco Control. Strategies including a total ban on tobacco advertising, higher taxation of tobacco products, graphic pictorial health warnings, plain packaging, creation smoke free public spaces, and measures to better control illicit sales have all been shown to decrease youth smoking. In Australia, experts are exploring innovative new ways to decrease illegal sales to minors. One possibility may be to issue smokers a special tobacco licence that could only be obtained by adults, after completing a knowledge test (27).

There were several limitations to our study. The first limitation was that we were unable to validate self-reported smoking status of children. Data was collected prior to implementation of a school based tobacco prevention programme and children's responses may have been influenced by the social desirability of being smoke free. However, previous studies have found that the reliability of self-reported smoking among adolescents is very high and questionnaires may provide reliable data (28). Another limitation was that the sample was not randomly selected. We cooperated only with school that agreed to participate in the preventive programme. Data was collected only from children attending public elementary schools in Prague and Central Bohemia Region. However, it is doubtful that a larger sample would significantly change our findings, as tobacco control policies are the same across all regions within the country.

CONCLUSION

Tobacco advertising increases brand awareness among children, and is associated with positive imagery of smoking and an

increased likelihood of smoking uptake (3, 9). The high level of cigarette brand awareness among Czech children provides evidence that the country's partial ban on advertising does not adequately protect children from the influence of tobacco industry marketing. With one quarter of youth smoking daily, the Czech Republic has one of the highest rates of ever smoking and daily smoking among youth in Europe (29, 30). In accordance with the World Health Organization's Framework Convention on Tobacco Control, our findings provide evidence that a total ban on all tobacco advertising, promotion and sponsorship, including implementation of plain packaging of all tobacco products, is needed in order to better protect children from the harmful effects of smoking in the Czech Republic.

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Conflict of Interests

None declared

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Disclaimer

Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

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