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**Title:** Visibility and availability of single cigarettes around schools in four Latin American countries

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## **Abstract**

**Introduction:** Single cigarette sales at tobacco-selling points-of-sale (POS) may promote smoking. We explored visibility and availability of single cigarettes in POS around schools in Argentina, Guatemala, Mexico and Peru, countries where their sale is banned. **Methods:** Between April-July 2023, an observational study was conducted at POS around high schools in urban and rural areas in Argentina, Guatemala, Mexico and Peru. A sampling frame of schools was generated from public registries, with schools categorized according to their socioeconomic status and randomly selected within SES strata. A total of 2081 POS were surveyed based on their proximity to these randomly selected schools. Data were collected on the visibility of single cigarettes (any cigarette sticks or open cigarette packs on display and able to be seen by customers were coded as visible), and their availability (i.e. whether singles were sold, whether visible or not). **Results:** Single cigarettes were visible in 37.2% of POS and available in most (84.9%), with neighborhood stores the primary source. In most (84.1%) POS with visible single cigarettes, they were displayed near candy or toys. Prices of the cheapest single cigarette sticks ranged from US\$0.03 in Argentina to US\$0.13 in Guatemala. **Conclusion:** The findings indicate widespread availability of single cigarettes in four Latin American countries where their sale is banned. The low price of single cigarettes, and their proximity to candy/toys, may increase the appeal of smoking to youth. Stricter enforcement of bans on single cigarettes, which may serve as a gateway to experimentation and continued smoking, is needed.

**Keywords:** Cigarette smoking, tobacco industry, tobacco retailers, loose cigarettes, Latin America.

## **KEY MESSAGES**

### **What is already known on this subject**

- While over 80 countries are reported to have banned the sale of single cigarettes, there is an ongoing issue regarding their availability in low- and middle-income countries.

### **What this study adds**

- This study involved the collection of data from tobacco-selling POS in urban and rural locations across Argentina, Guatemala, Mexico and Peru.
- Single cigarettes, despite being banned, were widely available around schools in all four countries.

### **How this study might affect research, practice or policy**

- There is a dearth of recent research examining the prevalence of single cigarette sales in Latin America.
- That low-cost single cigarettes, which are often in close proximity to candy or toys, appears to be the norm highlights the need for stricter enforcement and punishment for tobacco-sellers breaching laws banning single cigarette sales, which across the four countries include fines, license suspension or revocation, business closure, and even jail.

## **Introduction**

As of January 2024, 183 countries have adopted the Framework Convention on Tobacco Control (FCTC), which aims to minimize tobacco-related harm globally. Article 16 addresses ‘Sales to and by minors’, stating that “each Party shall endeavour to prohibit the sale of cigarettes individually or in small packets which increase the affordability of such products to minors”.<sup>1</sup> At least 88 countries are reported to have banned the sale of single (or loose) cigarettes.<sup>2</sup> Doing so aims to address concerns that single cigarettes discourage smokers from quitting and encourage young people to start smoking given their accessibility, low price, and the absence of on-pack warnings that describe the risks of smoking, all of which may increase the appeal and/or reduce perceptions of harm from smoking.<sup>3–10</sup> Nevertheless, singles sales have been commonly reported in low- and middle-income countries in Africa,<sup>11,12</sup> Asia<sup>7,13</sup> and Latin America.<sup>3,14,15</sup> There is a dearth of recent research examining the prevalence of single cigarette sales in Latin America however, particularly where their sale is banned.

This study describes the visibility and availability of single cigarettes at POS around schools in Argentina, Guatemala, Mexico, and Peru, four upper-middle-income countries in Latin America where their sale is banned.<sup>2</sup> Details of the regulations on single sales in each country (as well as youth access and on-pack warnings) can be found in Supplementary Table 1. The aim of this study was to better understand the scale of the problem in these countries, and, therefore, the effectiveness of legislation and current enforcement efforts.

## **Methods**

### *Design and sample*

Between April and July 2023, an observational study was conducted at POS in four cities in Argentina, Guatemala, Mexico, and Peru, as part of the ‘REmoving the MArketing Power of

cigarettes' (REMAP) project. Four locations were selected within each country to reflect diversity in terms of size and rurality. The target sample was 500 POS per country, 125 POS per city. We identified POS based on their proximity to high schools, so as to capture possible retail exposure among young people. The sampling frame for schools was generated from public domain databases of the Ministries of Education in each country. Each location was divided into geostatistical units appropriate for the country and schools categorized based on their area-level socioeconomic status. Both public and private schools were included, selected within each country to reflect the observed proportions of each type of school. We classified an area as rural if the primary economic activity of that area was agricultural.

### *Procedure*

To locate POS at each site, schools were used as a starting point. Similar to the Tobacco Pack Surveillance System (TPackSS) methodology,<sup>16</sup> with their backs to the main entrance of each school, researchers began to walk pre-planned routes, looking for POS in which tobacco was being sold. All the POS were within 400 meters of the schools. To record information about each POS, including location, type (formal or informal), interior and exterior tobacco marketing, and display of single cigarettes, the team built a codebook based on literature and piloted it prior to use.

We identified and purchased packs of each cigarette brand variant on the market, and all unique packs (e.g. different pack sizes, limited-edition packs, etc) for each variant, and recorded the sale of single cigarettes. A POS was coded as having visible single cigarettes if any cigarette sticks or open cigarette packs were on display and able to be seen by customers. Whether visible or not, all vendors were asked the price of the cheapest single cigarette sold. If the vendor gave a price, this was recorded and single cigarettes were coded as 'available'. Data were uploaded to the Kobo Toolbox platform ([www.kobotoolbox.org](http://www.kobotoolbox.org)), which was

installed on mobile phones for real-time data collection at each POS. The study received approval from the relevant ethics committees in Argentina, Guatemala, Mexico, Peru and Scotland.

### *Analysis*

Descriptive analysis of the data was carried out using SPSS v27. The percentage of each type of POS where single cigarettes were visible and available was calculated for each country and for the sample. Thus we report, for example, how many neighborhood stores in a country have single cigarettes visible and what percentage of the total neighborhood stores in that country this represents.

### **Results**

Data were collected from 2081 POS (512 in Argentina, 504 in Guatemala, 506 in Mexico, and 559 in Peru), with Table 1 showing the sample POS characteristics overall and by country. The POS sample was predominantly located in urban areas (72.2%) and areas with medium socioeconomic level (34.9%). More than three-quarters of the POS were neighborhood stores (77.0%), followed by kiosks (10.9%), convenience stores (5.7%), street vendors (3.3%), supermarkets (1.9%), and service stations (1.2%).

Single cigarettes were visible in 37.2% of POS (Table 1), most commonly among street vendors (92.7%) and neighborhood stores (40.6%). Guatemala had the highest number of POS with visible single cigarettes (59.6%). For POS where single cigarettes were visible, the vast majority (89.9%) sold single flavor capsule cigarettes; these are cigarettes with capsules in the filter that can be burst to change the flavor. Single cigarettes were available for sale in 84.9% of POS (Table 1), predominantly among street vendors (100%) and

neighborhood stores (91.1%). Peru had the highest number of POS with available single cigarettes (31.4%).

Most (84.1%) POS with visible single cigarettes displayed them near (within 50cm) candy or toys. The country with the highest proportion of POS with visible singles that were located within 50cm of candy or toys was Guatemala (92.6%), followed by Argentina (68.3%), Mexico (62.0%), and Peru (7.4%). Prices of the cheapest single cigarette ranged from US\$0.03 in Argentina, US\$0.05 in Peru, US\$0.11 in Mexico to US\$0.13 in Guatemala.

**Table 1:** Characteristics of points-of-sale in Argentina, Guatemala, Mexico and Peru, and visibility/availability of single cigarettes

	<b>Argentina</b> n (%)	<b>Guatemala</b> n (%)	<b>Mexico</b> n (%)	<b>Peru</b> n (%)	<b>Total</b> n (%)
<b>Sample characteristics</b>					
<b>Area</b>					
Rural	132 (25.8)	250 (49.4)	132 (26.2)	64 (11.5)	<b>683 (32.8)</b>
Urban	380 (74.2)	256 (50.6)	372 (73.8)	495 (88.6)	<b>1503 (72.2)</b>
<b>Socioeconomic level</b>					
Low	170 (33.2)	250 (49.6)	91 (17.9)	140 (25.0)	<b>651 (31.3)</b>
Medium	184 (35.9)	87 (17.3)	144 (28.5)	311 (55.6)	<b>726 (34.9)</b>
High	158 (30.9)	169 (33.5)	269 (53.2)	108 (19.3)	<b>704 (33.8)</b>
<b>Type of point-of-sale</b>					
Street vendor	0	24 (4.7)	33 (6.6)	11 (1.9)	<b>68 (3.3)</b>
Convenience store	12 (2.3)	17 (3.4)	64 (12.7)	26 (4.7)	<b>119 (5.7)</b>
Service station	13 (2.5)	10 (1.9)	0	2 (0.4)	<b>25 (1.2)</b>
Kiosk	166 (32.4)	4 (0.8)	28 (5.6)	29 (5.2)	<b>227 (10.9)</b>
Neighbourhood store	306 (59.8)	439 (86.8)	367 (72.8)	491 (87.8)	<b>1603 (77.0)</b>
Supermarket	15 (2.9)	12 (2.4)	12 (2.4)	0	<b>39 (1.9)</b>
<b>Visibility of single cigarettes within each type of point-of-sale,* by country and overall</b>					
Street vendor	0	22 (91.7)	33 (100.0)	8 (72.7)	<b>63 (92.7)</b>
Convenience store	0	5 (29.4)	1 (1.6)	2 (7.7)	<b>8 (6.7)</b>
Service station	0	0	0	0	<b>0</b>
Kiosk	23 (13.9)	4 (100.0)	18 (64.3)	8 (27.6)	<b>53 (23.4)</b>
Neighbourhood store	58 (19.0)	431 (98.2)	98 (26.7)	63 (12.8)	<b>650 (40.6)</b>
Supermarket	1 (6.7)	0	0	0	<b>1 (2.6)</b>
<b>Total</b>	<b>82/512</b> <b>(16.0)</b>	<b>462/506</b> <b>(91.3)</b>	<b>150/504</b> <b>(29.8)</b>	<b>81/559</b> <b>(14.5)</b>	<b>775/2081</b> <b>(37.2)</b>
<b>Availability of single cigarettes within each type of point-of-sale,* by country and overall</b>					
Street vendor	0	24 (100.0)	33 (100.0)	11 (100.0)	<b>68 (100.0)</b>
Convenience store	7 (58.3)	16 (4.1)	1 (1.6)	25 (96.2)	<b>49 (41.2)</b>
Service station	2 (15.4)	10 (100.0)	0	2 (100.0)	<b>14 (56.0)</b>
Kiosk	137 (82.5)	4 (100.0)	26 (92.9)	29 (100.0)	<b>196 (86.3)</b>
Neighbourhood store	236 (77.1)	415 (94.5)	285 (77.7)	488 (99.4)	<b>1424 (91.1)</b>
Supermarket	3 (20.0)	11 (91.7)	1 (8.3)	0	<b>15 (38.5)</b>

<b>Total</b>	<b>385/512</b> <b>(75.2)</b>	<b>480/506</b> <b>(94.9)</b>	<b>346/504</b> <b>(68.7)</b>	<b>555/559</b> <b>(99.3)</b>	<b>1766/2081</b> <b>(84.9)</b>
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*\* Percentages reflect the proportion of each type of point-of-sale where single cigarettes were visible or available*

## Discussion

We found that despite their illegality, single cigarettes were visible in almost two-fifths of POS in Argentina, Guatemala, Mexico and Peru and available in more than four-fifths. While the FCTC recommends that each Party adopt and implement effective measures to protect against such sales, including penalties against sellers and distributors,<sup>1</sup> this study highlights a lack of enforcement in all four countries. The availability of single cigarettes can potentially have negative implications for public health, as it may increase their affordability, particularly for children and adolescents and the less affluent, for whom the purchase and consumption of single cigarettes is most common.<sup>4,6,12,15</sup> The age of smoking initiation in Argentina, Guatemala, Mexico and Peru typically ranges from 12 to 18 years old (see Supplementary Table 1), with research needed to explore the role that access to single cigarettes plays in starting smoking.

Visibility and availability of single cigarettes was highest in neighborhood stores, as found in research in Mexico from 2006.<sup>15</sup> Neighborhood stores are often deeply rooted in communities, as owners are mostly residents of the neighborhood.<sup>17</sup> As such, young people may have relatively easy access to single cigarettes because they know the seller. Selling cigarettes individually rather than by the pack can also help increase profits, since vendors mostly charge more per stick when sold as a single compared to a pack.<sup>8,18</sup> Kiosks and street vendors also contribute to the easy access of single cigarettes.<sup>10,12</sup> Widespread visibility and easy accessibility of single cigarettes have been considered symbols of smoking normalcy, promoting the perception that smoking is socially acceptable.<sup>5,6,9</sup> That single cigarettes do not contain health warnings, except in Canada as a result of a recently implemented policy which requires warnings to be displayed on cigarette filters, further blurs these lines.<sup>7</sup>



We found that visible single cigarettes were often in close proximity to candy or toys. Although there is no evidence that candy or toys were intentionally placed near cigarettes by vendors, this proximity may blur the lines of acceptability for young people. Previous research suggests that having single cigarettes sold near candy or toys may make cigarettes and smoking seem more desirable and less harmful.<sup>3</sup> Research exploring adolescent's perceptions of single cigarettes, and whether these perceptions are influenced based on their relation to toys or candy, would be of value.

Our findings show high non-compliance with laws prohibiting the sale of single cigarettes in each of the four countries (see Supplementary Table 1) and that little has changed in this respect over the last 15 years.<sup>3,14,15</sup> The availability and affordability of single cigarettes can attract youth to smoking while offering tobacco companies a marketing advantage, particularly for promoting new brands like capsule cigarettes, which are more visually appealing and flavorful compared to traditional brands. The four countries explored in this study have high market share of flavor capsule cigarettes (between 20% and 35% of cigarette sales),<sup>19</sup> with 9 in 10 POS with visible single cigarettes having single flavor capsule cigarettes, thus allowing youth cheap access to these fun, interactive products and the panoply of flavors available.<sup>19</sup> As such, while single cigarette sales may be viewed as a low priority for governments in Latin America, stricter enforcement should be high on the agenda to prevent such sales providing a potential gateway into smoking and continued use.

Our sample was relatively large and covered urban and rural areas in each of the four countries, but they are not nationally representative and, while reflecting the tobacco-selling POS encountered in the different locations, included a very large number of neighborhood stores. Despite literature suggesting that street vendors are often a key source of single cigarettes,<sup>10,12</sup> data collection near schools was insufficient due to their limited presence. The timing of data collection may have influenced the number of street vendors captured, as they

often operate at specific times near schools, when students are arriving and departing.<sup>20</sup>

While our focus was on visibility and availability of single cigarettes at POS, it is important to better understand the impact of this on youth trial and continued used, and how enforcement can be improved.

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## **Competing interests**

None declared.

## **Data Availability**

Data will be available for sharing, upon reasonable request, when all planned articles are published or in August 2025.

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