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Research Article

Cigarette flavours and design features available near schools before plain packaging implementation in Uruguay

Laura Llambi[1]*, Mauricio Minacapilli[1], Mary Barros[2], Carolina Parodi[1], Valentina Gonzalez Peluffo[1] and Virginia Nuñez[1]

[1]Internal Medicine Department, Tobacco Cessation Clinic, Hospital de Clinicas, Facultad de Medicina, Universidad de la República, Montevideo, Uruguay

[2]Psychology Department, Tobacco Cessation Unit, Hospital de Clinicas, Facultad de Medicina, Universidad de la República, Montevideo, Uruguay

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***Corresponding author:** Laura Llambi, Internal Medicine Department, Tobacco Cessation Clinic, Hospital de Clinicas, Facultad de Medicina, Universidad de la República, Montevideo, Avda. Italia s/n esq. Las Heras. Piso 11. Zip Code: 11600, Montevideo, Uruguay, Tel: +598 99 625 962;
E-mail: llambil@hc.edu.uy, laura.llambi@gmail.com

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Abstract

Background: The tobacco industry continually develops marketing strategies to reach potential new consumers. One of these strategies is marketing the cigarette itself through design appeals and flavours. Uruguay is the second country to implement plain packaging legislation for cigarettes in the Americas in 2020. This study aimed to explore flavouring and design features of tobacco products available near Uruguay schools immediately before the implementation of standardized plain package legislation, to monitor tobacco industry tactics.

Methods: A fieldwork protocol was adapted from the one developed at Johns Hopkins University and implemented in fifteen neighbourhoods in Montevideo, Uruguay, across different socioeconomic areas. The protocol included surveying retailers near schools, purchasing tobacco, and coding per its characteristics.

Results: Among the surveyed retailers, 86.67% sold flavoured cigarettes. Twenty-three unique tobacco products were purchased. Appealing design features were identified in 73.9% of the packs and 34.78% of the products were flavoured cigarettes. Flavoured cigarettes lacked the child protection warning in a greater proportion than non-flavoured ones. The most frequently found filter designs concerned the activation of flavour with capsule designs (33.3%) and features meant to imitate technological symbols that appeal to youth.

Conclusions: This study shows an increase in availability of flavoured cigarettes in Uruguay immediately before plain packaging implementation. In countries developing plain packaging legislation flavour proliferation and modification of design features must be monitored and addressed.

Introduction

Tobacco use is the leading cause of preventable death worldwide. As tobacco control laws scale up in some countries, the tobacco industry is developing strategies to reach potential new consumers. These strategies have international impact and involve globalisation of tobacco trade, research and marketing tactics. Due to more significant restrictions on advertising, promotion, and sponsorship of tobacco products, these strategies include new cigarette flavours and packaging designs [1,2]. The use of appealing designs and flavours could encourage experimentation among young people [3,4]. Pack design, the cigarette itself, and its filter are important factors for smokers' choice and brand loyalty [5–7] .

Sometimes cigarette packaging is designed to provide text messages associated with health, modernity, or vitality to consumers [8]. Some flavoured cigarettes contain flavour capsules inside the filter, which the smoker squeezes to break the capsule and release a flavourful liquid. Some design features on packs are intended to imitate technological features.

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For example, a pack may appear to have a 'power' or 'play' button; the buttons (illustrations made to look like buttons) may be used by some brands to indicate how to change the taste to menthol by 'turning on' (squeezing) something inside the cigarette. Flavoured cigarettes are appealing to kids, adolescents, and young adults, in whom they are believed to promote initiation [3,9,10], increase addictiveness [11] and decrease risk perception [12].

Additionally, flavours like menthol act synergistically with nicotine through biological mechanisms on acetylcholine receptors in the brain. They produce sensory reinforcement, intensifying symptoms of withdrawal, and altering metabolism by increasing its bioavailability [13].

Uruguay recently passed the plain packaging legislation, which was fully implemented in February 2020 [14]. Thus, it became the second country in the Americas region and the first in South America to adopt this strong tobacco control measure.

The current legislation prohibits the advertisement, promotion, and sponsorship of tobacco products, including the display of packs at the points of sale. Likewise, deceptive terms such as 'light' or 'mild' have been banned; pictorial health warnings cover 80% of packaging surfaces, and cigarette companies are required to adhere to a single presentation (one brand variant) per brand family [15,16].

The development of new flavoured tobacco products with unique design characters was observed coincidentally with plain packaging implementation in countries such as Australia and the United Kingdom [17,18] Consequently, experts recommended that countries developing plain packaging legislation should explore these other strategies that accompany the product, primarily to broaden the regulations and prevent the development of these new tobacco attractions.

The study examined the availability of flavourings and design features in tobacco products in Uruguay immediately before the implementation of plain package legislation. Particularly, the study aimed to explore which characteristics were available among retailers near schools, as these products are particularly attractive to youth. This information could help tailor further policies globally, and serve as baseline data to monitor the issue after plain packaging implementation.

Methods

The fieldwork protocol was adapted from the Tobacco Packet Surveillance System (TPackSS) of Johns Hopkins University [19]. It was implemented in 15 neighbourhoods in Montevideo, Uruguay, sampled for convenience, corresponding to five neighbourhoods per each of the three socioeconomic (low, middle, and high) areas, as per the National Socioeconomic Index [20]. One high school or college (hub) in each of the 15 neighbourhoods was selected based on density, safety, and school size while avoiding geographic overlap. Field workers had a training session and were provided with a printed manual with data collection procedures. Two data collectors surveyed two tobacco retailers (kiosks, small warehouses, and mini markets) near each of the 15 schools to obtain data between 1 June and 30 August 2019, six months before implementation of plain packaging. The retailers were selected by data collectors, starting from the selected hub based on the commercial activity nearby. After the first retailer was visited, a visual inspection procedure was repeated: if no commercial activity was seen, data collectors walked in a right-hand direction up to five blocks in search of a second retailer, until they identified two per hub. At each store, data collectors disclosed that they were participating in a study about flavoured cigarettes. The vendor was asked which tobacco product brands (flavoured or non-flavoured) were available at the store, and a pack of each different product was purchased. The responses were registered on paper forms, and the packs were labelled and stored in plastic bags. The same procedure was applied for subsequent retailers in a bid to acquire products not previously purchased. Each unique pack was photographed, and its characteristics were entered into a database. The variables were coded, inspired by the TPackss Features and Appeals Codebook. A pilot plan was conducted before the start of the study.

The packs were carefully observed by three researchers, wording and design were noted, and the packs were opened and emptied. Features of the cigarette, namely paper, filter, and filter contents were then coded according to their flavour capsules and number, colour, and characteristics. Statistical software SPSS Version 20 was used (IBM Corp., Armonk, NY, USA).

Results

Thirty retailers were visited and surveyed. Twenty-three unique tobacco products were purchased, including 21 cigarette packs and two rolling tobacco packs. No specimen provided information on the contents of nicotine, tar, or carbon monoxide, and only 9 out of the 23 (39.1%) had some warning of protection for minors, such as not being available for sale to persons under 18 years of age.

Package design features

Appealing design features were found in 17 of the 23 packs (73.9%), such as fancy prints (30.4%), metallic or shiny finishes (21.7%), relief or bas-relief (21.7%), and contrasting colours and holographic images (13%). Many of the packs had two types of appeal (see Table 1). In 7 of the 23 packs (30.4%), lexical features related to quality or luxury were found using words like 'finest', 'premium', 'class A', or 'quality'. In 8 (34.8%) cases, the package contained language alluding to freshness, relaxation, enjoyment, or sensation (Figure 1).

Flavours

Flavoured cigarettes comprised 34.78% of the products available near schools. Of the 30 retailers surveyed, 26 (86.67%) sold flavoured cigarettes. They were available at all socioeconomic levels. Several retailers had different flavoured cigarettes, with up to five different brands. Of the eight flavoured brands, three were sold at all socioeconomic levels, while another three only at high and medium socioeconomic levels, and two others only at medium and low socioeconomic level neighbourhoods. Flavoured cigarettes lacked child

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Figure 1: Packs, sticks, and filter contents and features, Uruguay 2019. Panel A: lexical about sensation and flavour; panel B technological and freedom of choice lexical in English language; panel C: capsule flavoured cigarette; panel D: filter designs in flavoured cigarettes.

protection warnings (62.5%) in a more significant proportion than non-flavoured ones (53%, p: 0.40). Appealing designed features were present in seven out of eight flavoured cigarette packs. In half of the flavoured cigarettes, the brand name itself suggested the presence of flavour or its activation (Double click ®, Dual sense ®, Iceball ®).

The filters of flavoured and non-flavoured cigarettes contained design characters, being more frequent in the former. The most frequently found filter designs represented the activation of flavour with ball or capsule designs in 33.3% of the filters, which sometimes added technological characters such as a 'play' or a 'power' (turn on) button. Filter designs also included images of leaves, crowns, or lines framing the brand logo in smaller proportions (Table 1, Figure 1). Out of the eight flavoured brands, six had menthol, and two of them had double flavours like menthol and strawberry or some other fruit.

Discussion

Our study found that more than one-third of the tobacco products available at retailers near youth educational centres across all socioeconomic level areas in Uruguay were capsule-flavoured. Notably, five of the eight flavoured cigarettes brands used in this study were not available in 2016, according to the research conducted by Deatley, et al. [21]. They used a similar protocol, indicating an apparent increase in varieties over three years in Uruguay. This is consistent with the findings of Scollo et al. and Moodie, et al. [17, 18] in countries that implemented plain packaging legislation. Our study found that the majority of retailers sold at least one flavoured cigarette brand (86.67%), this percentage is higher than that found in Bolivia (77.4%) and Brazil (80%), similar to that of Chile (85.2%), and lower than that of Argentina (88.5%) and Peru (95.0%) [22].

The variety of flavoured cigarettes within the same brand was restricted to one, as national regulations require having a single presentation per brand, to avoid elements that may induce smokers to believe a variant to be less harmful than another, contrary to what has been observed in other countries. Consistently, our study found eight brands of flavoured cigarettes available, much less than those in Peru (15 brands), Chile (18 brands), Bolivia (20 brands), and Argentina (23 brands) [22]. In these countries, up to five variants of flavours of the same brand have been reported, resulting in a much higher number of flavoured cigarettes brands overall. The single presentation per brand requirement in Uruguay possibly limited the proliferation of various flavours for each of the popular brands available. Regulations forbidding marketing and displaying of these products at the point of sale near sweets or snacks targeting youth may also explain the differences. The flavoured cigarettes in our study had appealing designs on packages, sticks, and filters; companies use them as a communication vehicle, free of health warnings and restrictions, as has been noted by other studies [1,2,23].

This study has several strengths. We highlight the use of standardized fieldwork and international coding protocols that allow better external validity and comparability. To the best of our knowledge, this study is novel because it was conducted immediately before the implementation of plain packaging regulations in a country belonging to the American region, particularly in Uruguay. Thus, this study explores the tobacco industry's marketing strategies in a strong tobacco control policy environment.

Nonetheless, it has some limitations. It was carried out in the capital city of Montevideo, and the selected hubs and retailers were sampled for convenience, limiting the generalizability of the results. Another limitation is that vendors being told this was a study of flavored cigarettes, they could have withheld products.

In conclusion, there was an increase in available flavoured cigarette brands prior to the implementation of plain packaging legislation in Uruguay. The variety of flavoured cigarettes available near schools in Uruguay is much smaller than in other countries, most likely due to the single presentation per brand restriction. In the absence of specific regulations on additives and flavourings or plain packaging, other countries could decrease availability by considering the implementation of this requirement. Attractive design features are present on cigarette sticks. Policymakers should consider tobacco flavour regulation to address this marketing strategy. From a global, international perspective, countries

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Table 1: Tobacco pack attributes, Uruguay 2019.

Brand	Taste switch	Type of flavour	Flavour imagery or lexical in the pack	Fancy features in pack	Imagery in filter	Filter content	No sale to minors warning
FLAVOURED							
Caps Duo	Yes	Menthol	Imagery and lexical	Explosion imagery	2 balls/skip track sign	2 capsules	Yes
Double Click	Yes	Menthol and fruit	Imagery and lexical	Shiny detailing and relief	2 coloured balls/Power lexical	2 capsules	No
Dual Sense	Yes	Menthol	Imagery and lexical	Explosion imagery	2 balls	2 capsules	No
Iceball	Yes	Menthol	Lexical	No	1 ball	1 capsule	Yes
Lucky Strike	Yes	Menthol	Imagery and lexical	Shiny detailing and relief	Power button sign	1 capsule	No
Niágara	Yes	Menthol	Imagery and lexical	Contrasting colours/ tobacco leaf	1 ball/Mint leaf	2 capsules	No
Pacífico	No	Menthol	Imagery and lexical	Metallic finish	1 ball/ Crown image	1 capsule	No
Remix	Yes	Menthol and fruit	Imagery and lexical	Contrasting colours	2 different coloured balls	2 capsules	Yes
NON FLAVOURED							
Benson & Hedges	N/A	N/A	N/A	No	Lines framing logo	None	Yes
California	N/A	N/A	N/A	Coloured Fancy pattern	Luxury imagery	None	No
Casino	N/A	N/A	N/A	No	Lines	None	Yes
Cerrito	N/A	N/A	N/A	Metallic finish	N/A	N/A	No
Coronado	N/A	N/A	N/A	Metallic finish	Lines framing logo	None	No
Fiesta	N/A	N/A	N/A	No	Lines pattern	None	Yes
J & M	N/A	N/A	N/A	Waves images	Lines pattern	None	No
L & M	N/A	N/A	N/A	No	Lines framing logo	None	Yes
Madison	N/A	N/A	N/A	Metallic finish	Lines framing logo	None	No
Marlboro	N/A	N/A	N/A	Holographic images	Fancy pattern	None	Yes
Nevada	N/A	N/A	N/A	Metallic finish	Luxury imagery	None	No
Ocean	N/A	N/A	N/A	No	Lines framing logo	None	No
Philip Morris	N/A	N/A	N/A	No	Fancy pattern	None	Yes
Richmond	N/A	N/A	N/A	Tobacco leaf	Fancy pattern	None	No
Rio Novo[a]	N/A	N/A	N/A	Metallic finish	N/A	N(A	No

[a]*Corresponds to chopped tobacco. N/A: not applicable*

considering plain packaging regulations must carefully plan how to monitor and regulate both cigarette design features and flavour proliferation prior to implementation. Monitoring and regulating potential attractions simultaneously could enhance plain packaging effectiveness. Future research is needed after the implementation of plain packaging globally to continue analysing the tobacco industry's strategies.

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Author contributions

Conceptualization L.LL, M.B and C.P; methodology, L.LL., M.M, V.G and V.N; software M.M, V.G and V.N.; formal analysis L.LL, M.B and C.P.; resources, L.LL, M.M and V.G.; data curation M.B, C.P and V.N; writing—original draft preparation LLL; writing—review and editing M.M, V.G, M.B, C..P and V.N project administration and funding acquisition, LLL; all authors have read and agreed to the published version of the manuscript.

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Ethical approval

The protocol was approved by the Ethics Committee of Hospital de Clinicas, University of the Republic of Uruguay.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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