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## Marijuana as a “concept” flavor for cigar products: Availability and price near California schools

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### Abstract

**Objectives**—To assess the retail availability of cigar products that refer to marijuana and the largest package size of cigarillos available for \$1 or less.

**Methods**—Trained data collectors conducted marketing surveillance in a random sample of licensed tobacco retailers that sold little cigars/cigarillos (LCCs) (n=530) near a statewide sample of middle and high schools (n=132) in California. Multilevel models examined the presence of marijuana co-marketing and cigarillo pack size as a function of school/neighborhood characteristics and adjusted for store type.

**Results**—Of stores that sold LCCs, approximately 62% contained at least one form of marijuana co-marketing: 53.2% sold cigar wraps marketed as blunt wraps, 27.2% sold cigarillos marketed as blunts, and 26.0% sold at least one LCC with a marijuana-related “concept” flavor. Controlling for store type, marijuana co-marketing was more prevalent in school neighborhoods with a higher proportion of young residents (ages 5–17) and with lower median household income. Nearly all stores that sold LCCs (87.9%) offered the products for less than \$1. However, significantly larger packs at similarly low prices were available near schools in lower-income neighborhoods and with a lower percentage of Hispanic students.

**Conclusions**—Understanding how the tobacco industry manipulates cigar products and marketing to capitalize on the appeal of marijuana to youth and other priority populations is important to inform regulation, particularly for flavored tobacco products. In addition, the retail availability of 5- and 6-packs of LCCs for less than \$1 near California schools underscores policy recommendations to establish minimum prices for multipacks.

## Introduction

More high school students smoked little cigars and cigarillos (LCCs) than cigarettes in 33 US states in 2015.<sup>1</sup> Concern is growing about co-use of tobacco and marijuana among youth, particularly among African-American youth.<sup>2,3</sup> In a 2015 survey, for example, one in four Florida high school students reported ever using cigars or cigar wraps to smoke marijuana.<sup>2</sup> One colloquial term for this is a “blunt.”

Adolescent cigar smokers were almost ten times more likely than adults to report that their usual brand offers a flavored variety.<sup>4</sup> Since the US ban on flavored cigarettes (other than menthol), the number of unique LCC flavors more than doubled.<sup>5</sup> Anticipating further regulation, the industry increasingly markets flavored LCCs with sensory and other descriptors that are not recognizable tastes.<sup>5</sup> For example, after New York City prohibited the sale of flavored cigars, blueberry and strawberry cigarillos were marketed as blue and pink, but contained the same flavor ingredients as prohibited products.<sup>6</sup>

Among the proliferation of such “concept” flavors (e.g., Jazz, Summer Twist, Moontrance), anecdotal evidence suggests that references to marijuana are evident.<sup>7,8</sup> Cigar marketing includes the colloquial term, “blunt”, in brand names (e.g., Royal Blunts, Bluntville, Phillies Blunt, True Blunt) and product labels (e.g., Juicy bluntzilla/bluntarillo, Double Platinum blunt wraps). Other marketing techniques imply that some brands of cigarillos make it easier for users to replace the contents with marijuana.<sup>9</sup> For example, the image of a zipper on the packaging for Splitarillos (Trendsettah USA, Inc) and claims about “EZ roll” suggest that products are easily manipulated for making blunts. We use the term “marijuana co-marketing” to refer to such tobacco industry marketing that may promote dual use of tobacco and marijuana (by the same person) and concurrent use (at the same time).

In addition to flavoring, low prices for LCCs also likely increase their appeal to youth.<sup>10</sup> In California, 74% of licensed tobacco retailers (LTRs) sold cigarillos for less than \$1 in 2013.<sup>11</sup> Before Boston regulated cigar pack size and price in 2012, the median price for a popular brand of grape-flavored cigars was \$1.19.<sup>12</sup> In 2012, 78% of US tobacco retailers sold single cigarillos, which suggests that the problem of cheap, combustible tobacco is widespread.<sup>13</sup> Additionally, the magnitude of the problem is worse in some neighborhoods than others. Popular brands of flavored cigarillos cost significantly less in Washington DC block groups with a higher proportion of African Americans<sup>14</sup> and in California census tracts with lower median household income.<sup>11</sup>

For the first time, this study examines neighborhood variation in the maximum pack size of cigarillos priced at \$1 or less and assesses the prevalence of marijuana co-marketing in the retail environment for tobacco. School neighborhoods are the focus of this research because 78% of USA teens attend school within walking distance of a tobacco retailer.<sup>10</sup> In addition, emerging research suggests that adolescents’ exposure to retail marketing is associated with greater curiosity about smoking cigars<sup>15</sup> and higher odds of ever smoking blunts.<sup>16</sup>

## Methods

Marketing surveillance was conducted near the subset of randomly sampled middle and high schools that agreed to participate in the 2015–2016 California Student Tobacco Survey or were undecided at the time of data collection (n=132 schools).

### Surveillance instrument

Trained data collectors recorded the presence of three elements of marijuana co-marketing: (1) blunts, (2) blunt wraps, (3) at least one cigar product with a marijuana-related flavor name. They were instructed to consider brand names and product labels to assess the availability of blunts and blunt wraps, separately. Existing research was used to identify examples of marijuana-related flavor names: Cali Green, Chiba, Chronic, Indo/High Indo, K2, Kush, Loud, OGK, Pineapple Express, and Purple Haze.<sup>7,8</sup> Data collectors indicated whether at least one LCC featured one of these 10 exemplar flavors or another marijuana-related flavor name, based on their judgment.

Using an integer scale that ranged from zero to 7 or more, data collectors reported the maximum pack size of cigarillos priced at \$1 or less, regardless of flavor or brand. Store type was categorized using standard definitions.<sup>11,13</sup>

### Sample

Using ArcGIS (v10.1, ESRI) and California's list of LTRs (mapping rate=99%), we identified all LTRs within 1/2 mile (Euclidean distance) of school boundary shapefiles that we obtained or created.<sup>17</sup> For schools without any LTRs within 1/2 mile, we increased the neighborhood boundary to 1 mile (n=19) or 2 miles (n=2). We telephoned all LTRs thus identified (n=1211) to verify that they sold LCCs (completion rate=79.2%; eligibility=79.0%).

In school neighborhoods with 6 or fewer LTRs that sold LCCs, we sampled all of them. In 48 neighborhoods, we randomly selected 50% or 6, whichever yielded the larger number. Between December 2015 and May 2016, trained coders visited 530 LTRs (M=4.0 per school, SD=2.1, completion rate=97.4%). Inter-rater agreement from repeat visits (n=29) was 86.2% for presence of a marijuana flavor reference, 75.9% for blunt wraps and 65.5% for blunts. Intraclass correlation for cigarillo pack size was 0.74.

### Analyses

We used generalized and general linear mixed models with random intercepts to examine the presence of marijuana co-marketing and the largest pack size of LCCs for \$1 or less as a function of store type (Level 1=530) and school enrollment/neighborhood demography (Level 2=132). Enrollment data (number of students, racial/ethnic composition, proportion receiving reduced-price meals) and demography (median household income, proportions of school-age and young-adult residents, population density) were derived from online sources.<sup>18,19</sup> Data were analyzed in 2017 using IBM SPSS Statistics 24 and HLM 7.

## Results

The Table summarizes descriptive statistics for store type and for schools as well as mixed models with these covariates. Nearly half of the LCC retailers near schools (45.8%) were convenience stores with or without gasoline/petrol. Overall, 61.5% of LCC retailers near schools contained at least one type of marijuana co-marketing: 53.2% sold blunt wraps, 27.2% sold cigarillos marketed as blunts and 26.0% sold blunt wraps, blunts or other LCC with a marijuana-related “concept” flavor. After adjusting for store type, marijuana co-marketing was more prevalent in school neighborhoods with lower median household income (OR=0.7, 95% CI: 0.5,0.9) and with a higher proportion of school-age youth (ages 5–17), (OR=1.4, 95% CI: 1.1,1.9) (see Table). School enrollment characteristics were not related to the presence of marijuana co-marketing.

Nearly all LCC retailers (87.9%) sold cigarillos for \$1 or less. The largest pack size at that price contained 2 cigarillos on average (M=2.1, SD=1.2, maximum=6). The largest packs priced at \$1 or less were singles in 10.9% of stores, 2-packs in 46.8%, 3-packs in 19.2%, 4-packs in 5.5%, and 5 or 6 cigarillos in 5.5%. After adjusting for store type, a significantly larger pack size of cigarillos was priced at \$1 or less in school neighborhoods with lower median household income (coef= -0.4, 95% CI: -0.6,-0.2) and near schools with a lower proportion of Hispanic students (coef= -0.3, 95% CI: -0.5,-0.1) (see Table).

## Discussion

In California, 79% of licensed tobacco retailers near public schools sold LCCs and approximately 6 in 10 of these LCC retailers sold cigar products labeled as blunts or blunt wraps or sold cigar products with a marijuana-related flavor descriptor. A greater presence of marijuana co-marketing in neighborhoods with a higher proportion of school-age youth and lower median household income raises concerns about how industry marketing tactics may contribute to disparities in LCC use.

The study results also suggest that \$1 buys significantly more cigarillos in California school neighborhoods with lower median household income. Policies to establish minimum pack sizes and prices could reduce the widespread availability of cheap cigar products and address disparities in disadvantaged areas.<sup>12,21</sup> After Boston’s 2012 cigar regulation, the mean price for a grape-flavored cigar was \$1.35 higher than in comparison communities.<sup>12</sup> The industry circumvented sales restrictions in some cities by marketing even larger packs of cigarillos at the same low price,<sup>22</sup> and the industry’s tipping point on supersized cigarillo packs for less than \$1 is not yet known. The retail availability of 5- and 6-packs of LCCs for less than \$1 observed near California schools underscores policy recommendations to establish minimum prices for multipacks (e.g., \$5 in Boston and \$12 in New York City).<sup>13,21,23</sup>

A novel measure of marijuana co-marketing and a representative sample of retailers near schools are strengths of the current study. A limitation is that the study assessed the *presence* of marijuana co-marketing, but not the *quantity*. The protocol likely underestimates the prevalence of marijuana co-marketing near schools because we lacked a comprehensive list of LCC brands and flavor varieties. Indeed, state and local tobacco control policy research

and enforcement would be greatly enhanced by access to a comprehensive list of tobacco products from the US Food and Drug Administration, including product name, category, identification number and flavor. Both a routinely updated list and product repository would be useful for tobacco control research, particularly for further identifying how packaging and product design reference marijuana use.

This first assessment of marijuana co-marketing focused on brand and flavor names because of their appeal to youth.<sup>24–26</sup> However, the narrow focus is a limitation that also likely underestimates the prevalence of marijuana co-marketing. Other elements of packaging and product design should be considered in future assessments. Examples are pack imagery that refers to blunt making, such as the zipper on Splitarillos, as well as re-sealable packaging for cigarillos and blunt wraps, which is convenient for tobacco users who want to store marijuana.<sup>9</sup> Coding for brands that are perforated to facilitate blunt making and marketing that refers to “EZ roll” should also be considered.

Future research could assess marijuana co-marketing across a larger scope of tobacco/nicotine products. The same devices can be used for vaping both nicotine and marijuana. Advertising for vaping products also features compatibility with “herbs” (e.g., dry-chamber vaporizers) and otherwise associates nicotine with words or images that refer to marijuana (e.g., Ganja Juice e-liquids).

Conducted before California legalized recreational marijuana use, the current study represents a baseline for understanding how retail marketing responds to a policy environment where restrictions on marijuana and tobacco are changing, albeit in opposite directions.<sup>20</sup> The prevalence of marijuana co-marketing near schools makes it imperative to understand how tobacco marketing capitalizes on the appeal of marijuana to youth and other priority populations. How marijuana co-marketing contributes to dual and concurrent use of marijuana and tobacco warrants study, particularly for youth and young adults. In previous research, the prevalence of adult marijuana use in 50 California cities was positively correlated with the retail availability of blunts.<sup>27</sup> Whether this is correlated with blunt use by adolescents is not yet known.

Consumer perception studies are necessary to assess whether marijuana co-marketing increases the appeal of cigar smoking or contributes to false beliefs about product ingredients. Research is also needed to understand how the tobacco industry exploits opportunities for marijuana co-marketing in response to policies that restrict sales of flavored tobacco products and to policies that legalize recreational marijuana use. Such assessments are essential to understand young people’s use patterns and to inform current policy concerns about how expanding retail environments for recreational marijuana will impact tobacco marketing and use.

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### WHAT THIS PAPER ADDS

- Flavors and low prices make cigar products attractive to youth. Although a majority of US cigar products are fruit-flavored, a growing proportion are marketed with “concept” flavors that are not recognizable tastes, such as color names and sensory descriptors.
- Anecdotal evidence suggest references to marijuana are evident among “concept” flavored cigars, but this has not been assessed systematically.
- Approximately 6 in 10 LCC retailers near California schools sold cigar products marketed as blunts, blunt wraps, or with at least one marijuana-related flavor descriptor. A greater presence of marijuana co-marketing in neighborhoods with a higher proportion of school-age youth and lower median household income raises concerns about how industry marketing tactics may contribute to disparities in LCC use. In addition, the retail availability of 5- and 6-packs of LCCs for less than \$1 that was observed near schools underscores policy recommendations to establish minimum prices for multipacks.



Correlates of marijuana co-marketing and largest cigarillo pack for \$1 or less: California, 2015–16

Table

Fixed Effect	Sample description	Marijuana co-marketing	Largest cigarillo pack for \$1 or less			
	n	%	OR	95% CI	Coef.	95% CI
<i>Intercept</i>			1.47	(1.1, 2.0)	2.2	(2.1, 2.3)
<b>Store type (Level 1, n=530)</b>						
Convenience	243	45.8%	Ref.		Ref.	
Discount store	11	2.1%	0.33	(0.1, 1.1)	-0.5	(-1.1, 0.1)
Liquor store	91	17.2%	<b>1.89</b>	(1.1, 3.2)	0.1	(-0.1, 0.3)
Pharmacy	34	6.4%	1.03	(0.4, 2.5)	<b>-1.6</b>	(-2.1, -1.1)
Small market	50	9.4%	0.54	(0.3, 1.0)	0.1	(-0.4, 0.6)
Supermarket	33	6.2%	<b>0.22</b>	(0.1, 0.5)	<b>-1.6</b>	(-1.9, -1.3)
Tobacco shop	55	10.4%	<b>9.28</b>	(3.7, 23.1)	<b>0.6</b>	(0.3, 0.9)
Other	13	2.5%	2.01	(0.5, 8.2)	-0.5	(-1.3, 0.3)
<b>School characteristics (Level 2, n=132)</b>						
<b>School neighborhood</b>	<b>M</b>	<b>SD</b>				
% School age (5–17 years)	18.7	4.3	<b>1.44</b>	(1.1, 1.9)	0.1	(0.0, 0.2)
% Young adult (18–24 years)	10.6	3.2	1.06	(0.8, 1.4)	-0.1	(-0.2, 0.0)
Median household income	65,807	25,240	<b>0.68</b>	(0.5, 0.9)	<b>-0.4</b>	(-0.6, -0.2)
Population density	6386	4484	1.01	(0.8, 1.3)	-0.1	(-0.2, 0.0)
<b>School enrollment</b>	<b>M</b>	<b>SD</b>				
% Hispanic	54.0	25.4	0.80	(0.5, 1.3)	<b>-0.3</b>	(-0.5, -0.1)
% African American	7.3	9.7	0.87	(0.7, 1.1)	0.0	(-0.1, 0.1)
% Asian/Pacific Islander	13.5	16.1	1.11	(0.8, 1.6)	0.1	(-0.1, 0.3)
% Free/reduced price meal	57.7	24	1.20	(0.8, 1.8)	0.2	(0.0, 0.4)
Number of students	1600	734	0.94	(0.8, 1.2)	-0.1	(-0.2, 0.0)

OR=Adjusted odds ratio; CI=Confidence Interval; Coef=coefficient; Ref=reference; M=mean; SD=Standard deviation. For marijuana co-marketing, cell entries are adjusted odds ratios (OR) and 95% CI from a population average generalized linear mixed model. For pack size, cell entries are regression coefficients and 95% CIs from a general linear mixed model. In school neighborhoods that contained more than one census tract, demographics were weighted in proportion to tract area. School/neighborhood variables were standardized. For example, for each standard deviation increase in % of school-age youth in the neighborhood, the odds of a tobacco retailer having marijuana co-marketing increased by 44%.