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Hypothetical Impacts of Flavored Cigar Sales Restrictions on Cigar Use Behavior

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Disclaimers

- The content of these studies is solely the responsibility of the authors and does not necessarily represent the official views of NCI, NIMHD, or FDA.
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Presentation Outline

- Background and significance of flavored cigar sales restrictions
- Study 1. In-depth interview study among a purposive sample of Black young adult cigar smokers
- Study 2. Online survey study using a nationally representative sample of adult flavored cigar smokers
- Future directions
- Limitations

Background of Cigar Smoking

- Cigar use trends: Although cigarette use has declined over time in the U.S., annual consumption of cigars doubled from 2000 to 2016 (6 to 12 billion sticks)
- Cigar use harm:
 - Cigar smoke contains toxic and cancer-causing chemicals that are harmful to both smokers and non-smokers
 - Cigar use is associated with lung cancer and oral cancer
 - Cigars can be more harmful than cigarettes
 - Traditional cigars can deliver 10 times the nicotine, 2 times the tar, and 5 times the carbon monoxide of cigarettes
 - Cigarillos can contain more tobacco and higher levels of carcinogens per gram of tobacco than cigarettes



Traditional Cigars

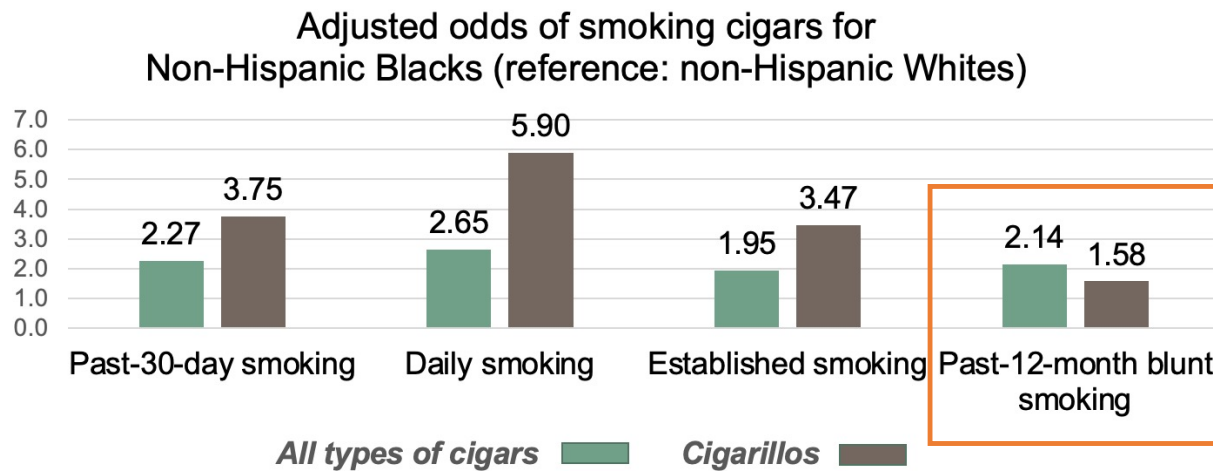


Cigarillos

Filtered Cigars

Sources:
U.S. Department of Treasury, Alcohol and Tobacco Tax and Trade Bureau. Tobacco Statistics. Washington, DC: Alcohol and Tobacco Tax and Trade Bureau; 2017.
National Cancer Institute. Tobacco Control Monograph Series. Monograph 9: Cigars: health effects and trends. HHS, National Cancer Institute. 1998.

Cigar Smoking Prevalence by Race/Ethnicity and Cigar Type in the U.S.



* All adjusted odds ratios above are statistically significant ($p < 0.05$)

Note: Cross-sectional data from the PATH Study (2015-2016) showed that non-Hispanic Blacks have more advanced cigar smoking patterns than non-Hispanic Whites, even after controlling for known risk factors. This pattern was especially pronounced for cigarillos.

Source: **Chen-Sankey, J. C.**, Mead-Morse, E. L., Le, D., Rose, S. W., Quisenberry, A. J., Delnevo, C. D., & Choi, K. (2021). Cigar-smoking patterns by race/ethnicity and cigar type: a nationally representative survey among US adults. *American Journal of Preventive Medicine*, 60(1), 87-94.

In 2020, non-Hispanic Black high school students reported past-30-day cigar smoking at levels **twice** as high as their White counterparts.

Source: FDA Commits to Evidence-Based Actions Aimed at Saving Lives and Preventing Future Generations of Smokers

Flavored Cigars and Sales Restrictions

- Why flavors?
 - Over half of cigar sales volume was flavored cigars
 - Over half of current cigar smokers smoked flavored cigars
 - Reported by youth and young adults as a reason to initiate cigar smoking
 - Flavors → Tobacco initiation, regular use, long-term use, and tobacco dependence
- Flavors were disproportionately marketed to low-SES and racial/ethnic minority populations and communities
- In April 2021, the FDA announced a plan to restrict the sales of cigar products with all characterizing flavors (including menthol)

Study 1: In-depth Interview Study among Black Young Adult Cigar Smokers

- The goal of this qualitative in-depth interview study is to understand the environmental risk factors for cigar smoking among Black young adults to inform policies
- **Participant Eligibility (n=40)**
 - 21-29 years
 - Self-reported non-Hispanic Black or African American
 - Smoked any cigars products (large cigars, cigarillos, filtered cigars) ≥ 4 times in the past two weeks
- **Participant Recruitment**
 - May and June 2021
 - Participants were recruited through social media platforms (Instagram, Facebook)
 - Majority of the participants were from the Washington D.C. region (no tobacco flavor ban)

Study 1: Methods

- **Research procedure**

- Step 1. Participate in a 15-minute online background survey
- Step 2. Receive a 50-minute phone interview led by the moderator (the interviews were audio recorded and converted into verbatim transcripts)

- **Interview guide question**

- The interviewer first introduced a hypothetical scenario where the sale of non-tobacco-flavored cigar products was restricted, and only tobacco-flavored or plain cigars were available to purchase.
- The interviewer then asked the participants to discuss how (same or different) they would smoke cigar products given this scenario.

- **Interview data coding and analysis**

- Three coders independently coded the transcripts
- Thematic data analysis was used to determine themes and subthemes (by cigar products predominantly smoked)



Study 1: Participant Characteristics (N=40)

Mean age: 26.0

Biological sex: Male (n=17)

Employment

- Full time (n=19)
- Part time (n=7)
- Unemployed (n=11)
- Others (n=3)

Financial situation

- Live comfortably (n=13)
- Meet needs with a little left (n=15)
- Just meet basic expenses (n=12)

Past-30-day cigar smoking

- Cigarillos (n=36)
- Large cigars (n=24)
- Blunts (n=23)
- Filtered cigars (n=7)

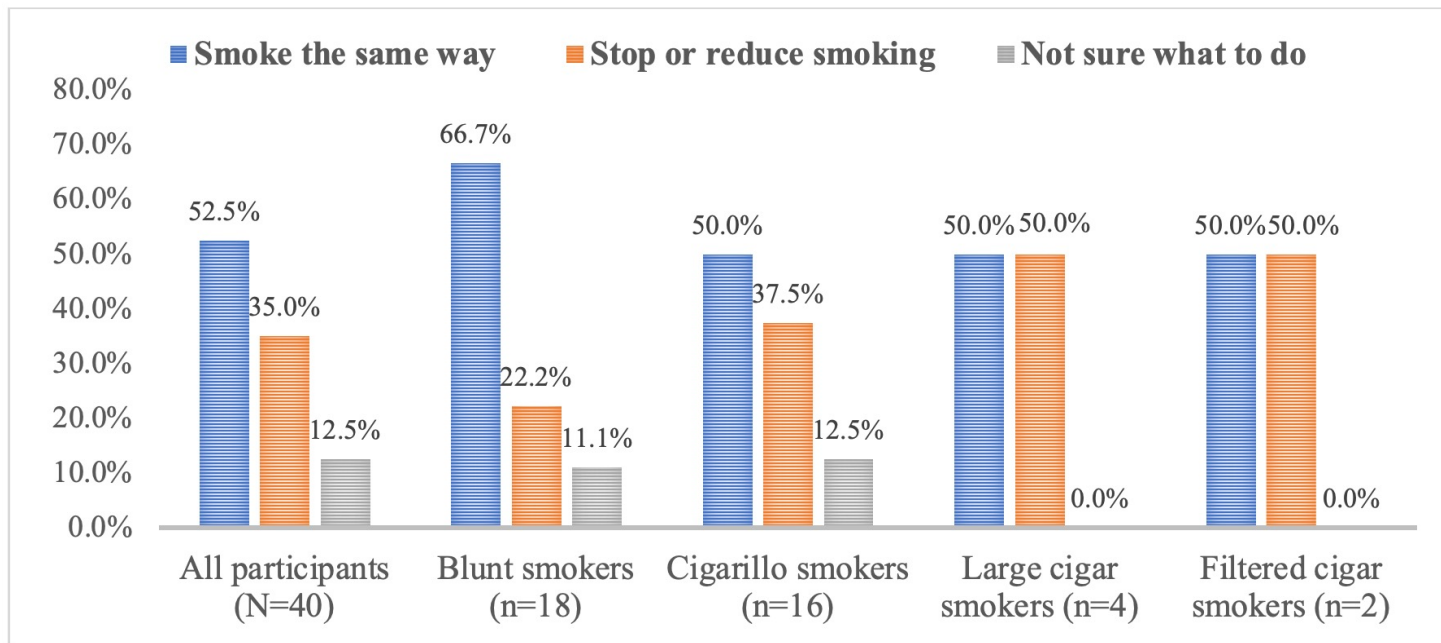
Predominant cigar type used in the past 30 days

- Blunts (n=18)
- Cigarillos (n=16)
- Large cigars (n=4)
- Filtered cigars (n=2)

Currently smoking other tobacco products (n=35)

Study 1: Results

Figure 1. Cigar Smoking Behavior Change Outcomes Given Flavored Cigar Sales Restrictions (Coded qualitative results; N=40)



Study 1: Results (Continued)

- **Would smoke cigars the same way (about half of participants)**
 - Smoking cigars mainly to consume cannabis (most of the blunt smokers)
 - Willing to try or continue to smoke plain cigars (enjoy the taste of plain cigars)
 - Addicted to cigar products (have a hard time giving up cigars)
 - Enjoy the feelings and stress relief from smoking cigars
 - Be “creative” and add flavors from food sources or other substances (e.g., honey, syrup, flavored THC wax)

Study 1: Results (Continued)

- **Would stop or reduce smoking cigars** (about a third of participants)
 - Cigarillo smokers
 - Have a strong preference towards flavored cigars or really enjoy cigar flavors
 - Flavors are an important reason to smoke cigars
 - Large cigar smokers
 - Too “boring” to smoke an entire large cigar without flavors
 - Other (unintended) consequences
 - Transition to smoke blunts/cannabis or smoke more blunts/cannabis
 - Smoke more cigarettes (mostly among cigarillo smokers)

Study 1: Results (Continued)

- **Undecided or uncertain of what to do** (about 13%)
 - Not sure whether they would like plain cigars or not (would try)
 - Depends on whether they would still have access to flavored cigars from online sources or other places (e.g., going across the “border”)

Study 1: Discussion

- How Black young adult cigar smokers may change their cigar smoking behavior depends on:
 - The cigar product type they predominately smoked (cigarillo vs. blunts)
 - The subjective outcome expectancies of smoking cigars (e.g., relieving stress)
 - Preferences towards flavored vs. plain cigars
 - Perceived addiction to smoking cigars
- Unintended consequences
 - Increased blunt smoking
 - Increased cigarette smoking
 - Add self-made flavors
 - Shift to purchase cigars online or other sources



Those who reported cigar addiction, had more positive outcome expectancies from smoking cigars, or strongly preferred flavors may be least likely to quit or reduce cigar smoking given the flavor ban

Study 2: Online Survey Study Among a Nationally Representative Sample of Adult Flavored Cigar Smokers (Methods)

- Data collection timeline: January-February 2021
- Data collection platform: Qualtrics online study panel
- Overall sample:
 - Recent former tobacco users and current tobacco users
 - Adults 21 years and over
- This study restricted the sample to current (past-30-day) cigar smokers who used non-tobacco flavors (n=343)
- Research question: What are the predictors of cigar smoking behavior change in response to flavored cigar sales restrictions?
- Statistical analysis
 - Weighted to reflect nationally representative populations (age, sex, race/ethnicity)
 - Univariate logistic regressions

Study 2: Methods (Continued)

If the sales of flavored cigar products that taste like fruits, alcohol, candy, menthol/mint, and desserts were banned, what would you do?

- I would stop smoking cigars altogether
 - If selected, unable to select other options
- I would smoke plain cigars without any flavors
- I would substitute flavored cigars with other flavored tobacco products
 - If selected, indicate what type of flavored tobacco products (cigarettes, e-cigarettes, hookah, and smokeless tobacco)
- I would substitute flavored cigars with cannabis
- I would substitute flavored cigars with other products not stated above.
Please specify: _____

Study 2: Results

Table 1. Hypothetical Outcomes of Behavior Change Given Flavored Cigar Sales Restrictions Among U.S. Current Flavored Cigar Smokers (n=343)

		Overall	Current Large Cigar Smokers	Current Cigarillo Smokers	Current Filtered Cigar Smokers	Current Blunt Smokers
	Weighted percentages		26.8%	60.0%	28.3%	71.6%
	Would quit cigars altogether	15.1%	7.9%	11.4%	18.2%	10.9%
	Odds ratios		0.40	0.50	1.32	0.36
	Would not quit cigars altogether					
	Would smoke plain cigars without any flavors	41.6%	1.65	1.95	0.65	0.99
	Would substitute flavored cigars with other flavored tobacco products	37.5%	1.60	1.20	1.18	1.55
	Menthol cigarettes	15.2%	4.17	1.04	1.82	1.50
	Non-Hispanic Black and Hispanics OR young adults (12-30) have higher odds or reporting cannabis use than non-Hispanic Whites and older adults, respectively		0.45	1.27	0.72	1.40
			0.92	0.85	0.99	2.66
	Flavored smokeless tobacco	5.4%	8.00	2.37	4.55	1.36
	Would substitute flavored cigars with cannabis	29.2%	1.68	0.95	2.51	4.24

Statistical significance $p < 0.05$

Study 2: Discussion

- Given cigar flavor sales restrictions:
 - Cigarillo and filtered cigar smokers may be most likely to quit smoking
 - Large cigar and blunt smokers may be least likely to quit smoking
- About 15% would quit cigars altogether
- About 40% would try or continue to use plain cigars
- Untended consequences
 - About 40% would substitute flavored cigars with other flavored tobacco products
 - About 30% might substitute flavored cigars with cannabis (higher racial/ethnic minorities and young adult use)

Future Directions

- The types of cigars smoked, flavor preference, cigar smoking outcome expectancies (e.g., stress relieve, consuming cannabis), and perceived cigar addiction may determine cigar smoking behavior change outcomes given the flavor ban
- Flavored cigar sales restrictions may need to be accompanied by
 - Reducing the appeal of plain cigar products
 - Evidence-based cigar smoking cessation efforts
 - Regulations and education about the use of other (flavored) tobacco products
 - Cannabis-related regulations and education
 - Concerns about health equity
- Use qualitative and mixed methods methods can help understand the influence of flavored tobacco sales restrictions

Study Limitations

- Data collection for both studies took place during COVID-19
 - May have different cigar use patterns due to cigar accessibility and heightened stress and cannabis use
- Did not separate out premium cigars from large, machine-made cigars (may be more quitting otherwise)
- The studies did not evaluate the real-world impact of the flavored cigar sales restrictions
 - Policy compliance and enforcement is the key (esp. concept flavors)
 - Online access

Questions and Comments



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