A longitudinal analysis of flavored cigar use and cigar smoking cessation in US adults

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Disclosures

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NCI = National Cancer Institute, NIH = National Institutes of Health, FDA = Food and Drug Administration, CTP = Center for Tobacco Products
Motivation

• Cigar use doubled from 2000-2016 in the U.S.
• Cigar smoking linked to a ↑ risk of death and CVD
• 1 in 3 adults who use cigars report flavored cigar use

CVD = cardiovascular disease

Objective

• To examine whether flavored cigar use was associated with cigar smoking cessation in a longitudinal sample of US adults with established cigar use
Study population


• Adults (18+) with established cigar use at baseline
  • Reported using cigars every day or some days
  • Used cigars during ≥5 days in the past 30 days
  • No exclusive, premium, traditional cigar use

• Had follow-up and complete covariate information
Statistical analysis

• Exposure: Any flavored cigar use versus none

• Outcomes:
  • 30-day and 1-year cigar smoking cessation (primary)
  • 30-day cessation of cigars and cigarettes (secondary)

• Multivariable discrete-time survival approach
  • Model 1: flavored cigar use and time
  • Model 2: Model 1 + age, sex, race/ethnicity, and income
  • Model 3: Model 2 + tobacco use and past-year blunt use

Note: Tobacco use included 30-day cigarette smoking intensity (sticks/day) and cigar smoking intensity (sticks/day)
Sensitivity analyses

- Varied PATH survey weights used and baseline exclusion criteria:
  - Model 3a: PATH Wave 2 weights
  - Model 3b: PATH ‘All Waves’ weights
  - Model 3c: Restricted to adults age 25+ years
  - Model 3d: No 5+ days in the past 30 days restriction
  - Model 3e: No exclusive, premium, traditional cigar restriction
  - Model 3f: Restricted to exclusive cigar use (30-day only)

PATH = Population Assessment of Tobacco and Health
Among adults with established cigar use, flavored cigar use was associated with a 21% lower risk of cigar smoking cessation compared to unflavored cigar use and there was no association between flavored cigar use and either 1-year cigar cessation or 30-day smoking cessation of 30-day cigar and cigarette smoking cessation.
Sensitivity analyses examining the associations between flavored cigar use and cigar smoking cessation, PATH, Waves 1-5 (2013-2019)

### BACKGROUND

However, our findings were sensitive to our choice of PATH survey weights and baseline exclusion criteria for established cigar use.

### METHODS

### RESULTS

<table>
<thead>
<tr>
<th>Outcome and model</th>
<th>Person n</th>
<th>Risk-period n</th>
<th>Hazard Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-day cigar smoking cessation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 3a: PATH Wave 2 weights</td>
<td>669</td>
<td>1,622</td>
<td>0.82 (0.64, 1.04)</td>
</tr>
<tr>
<td>Model 3b: PATH 'All Waves' weights</td>
<td>445</td>
<td>1,190</td>
<td>0.91 (0.68, 1.21)</td>
</tr>
<tr>
<td>Model 3c: Restricted to adults age 25+ years</td>
<td>463</td>
<td>1,225</td>
<td>0.85 (0.64, 1.13)</td>
</tr>
<tr>
<td>Model 3d: No 5+ days in the past 30 days restriction</td>
<td>1,129</td>
<td>2,513</td>
<td>0.88 (0.76, 1.03)</td>
</tr>
<tr>
<td>Model 3e: No exclusive, premium traditional cigar use restriction</td>
<td>774</td>
<td>1,943</td>
<td>0.87 (0.69, 1.09)</td>
</tr>
<tr>
<td>Model 3f: Restricted to exclusive cigar use</td>
<td>298</td>
<td>784</td>
<td>0.90 (0.61, 1.32)</td>
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<tr>
<td>1-year cigar smoking cessation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 3a: PATH Wave 2 weights</td>
<td>669</td>
<td>1,837</td>
<td>1.05 (0.86, 1.27)</td>
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<tr>
<td>Model 3b: PATH 'All Waves' weights</td>
<td>445</td>
<td>1,364</td>
<td>0.98 (0.74, 1.29)</td>
</tr>
<tr>
<td>Model 3c: Restricted to adults age 25+ years</td>
<td>463</td>
<td>1,352</td>
<td>0.93 (0.71, 1.22)</td>
</tr>
<tr>
<td>Model 3d: No 5+ days in the past 30 days restriction</td>
<td>1,129</td>
<td>3,098</td>
<td>0.97 (0.81, 1.15)</td>
</tr>
<tr>
<td>Model 3e: No exclusive, premium traditional cigar use restriction</td>
<td>774</td>
<td>2,193</td>
<td>0.97 (0.78, 1.21)</td>
</tr>
</tbody>
</table>

PATH = Population Assessment of Tobacco and Health
Conclusions

• Limited evidence of lower risk of 30-day cigar smoking cessation associated with flavored cigar use

• There is a need for thoughtful consideration of how to define ‘established cigar use’ particularly in the context of flavored cigar products
  • More work on cigar use transitions needed

• Larger diverse cohorts may help identify differences by use patterns and sociodemographic subgroups
## Strengths and limitations

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Limitations</th>
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<tbody>
<tr>
<td>Nationally-representative</td>
<td>Small sample of adults with reported established cigar use</td>
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<tr>
<td>Longitudinal</td>
<td>Exposure definition may lack specificity among adults who use multiple cigar products</td>
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<tr>
<td>Short- and long-term cessation</td>
<td></td>
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<td>Numerous sensitivity tests</td>
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Comparisons to prior work and implications for FDA’s regulation of flavored cigar products

- Most local, state, and international flavored cigar product bans have resulted in a decline in sales
- Some evidence those who use flavored cigars may switch to unflavored products in response to a ban
- Potentially large public health impact of a US ban

FDA = Food and Drug Administration
Thank you

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