Flavored Tobacco Product Use Among US Youth Aged 12-17 Years, 2013-2014

Most tobacco use begins during youth and young adulthood.¹ Recent declines in prevalence of cigarette smoking among youth have coincided with increased use of e-cigarettes and hookahs.² Although flavors other than menthol are prohibited in cigarettes in the United States,³ flavored non-cigarette tobacco product use is widely available and may appeal to youth. We examined flavored tobacco use among a nationally representative sample of US youth.

Methods | The Population Assessment of Tobacco and Health (PATH) Study is a household-based, nationally representative, longitudinal cohort study of 45,971 adults and youth (12-17 years) in the United States. We analyzed youth data from wave 1, collected September 2013 through December 2014 (the survey is available in the eAppendix in the Supplement). Among youth within participating households (weighted household screener rate, 54%), 78.4% participated in an audio computer-assisted interview.

Nonresponse analysis showed few differences with referent national surveys.⁴ Survey weights were adjusted for nonresponse.

Results | Of the 13,651 youth enrolled and included in this analysis, 51.3% were male, 54.5% non-Hispanic white, 13.7% non-Hispanic black, and 22.5% Hispanic. Mean respondent age was 14.5 (SD, 0.02) years. Table 1 summarizes ever and past 30-day use of flavored tobacco products. The majority of youth ever-users reported that the first product they had used was flavored, including 88.7% of ever hookah users, 81.0% of ever e-cigarette users, 65.4% of ever users of any cigar type, and 50.1% of ever cigarette smokers. For past 30-day youth tobacco use, the overall proportion of flavored product use was 79.8% (95% CI, 77.3%-82.3%) among users of any product and 89.0% among hookah users, 85.3% among e-cigarette users, and 59.5% among cigarette smokers.

Table 2 presents leading reasons for use among past 30-day noncigarette tobacco users. Youth consistently reported product flavoring as a reason for use across all product types, including e-cigarettes (81.5%), hookahs (78.9%), cigars (73.8%), smokeless tobacco (69.3%), and snus pouches (67.2%).

Discussion | Among a survey of youth aged 12 to 17 years, the majority who self-reported ever experimenting with tobacco started with a flavored product, and most current youth tobacco users reported use of flavored products. This study extends a recent national report⁶ on youth use of flavored tobacco products by examining first use of flavored product among ever users by products and flavorings as a reason for

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References


² Conflict of Interest Disclosures: The authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Dr Hook reported receiving grants from Becton Dickinson, Hologic, Roche Molecular, and Cepheid; serving as a consultant for Rib-X (Melinta) and Cepheid; receiving honoraria from Becton Dickinson, Roche Molecular, and Cepheid; and receiving royalties from McGraw-Hill. No other disclosures were reported.

³ Funding/Support: The Gonococcal Isolate Surveillance Project is funded by the CDC, an agency of the US Department of Health and Human Services.

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noncigarette tobacco use. Consistent with national school-based estimates, study confirms widespread appeal of flavored products among youth tobacco users. In addition to continued proven tobacco control and prevention strategies, efforts to decrease use of flavored tobacco products among youth should be considered.

Study limitations include potential difficulty with recall because youth often experiment with many products. This cross-sectional analysis does not allow direct estimation of flavoring’s role in initiation of tobacco use among youth. In addition, there are mode differences in household- vs school-based youth tobacco surveys. Data from future PATH Study waves can provide information on tobacco use trajectories following experimentation with flavored compared with nonflavored products.

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### Table 2. Leading Reasons for Noncigarette Tobacco Product Use Among Past 30-Day Tobacco Users, by Product—Population Assessment of Tobacco and Health Study Youth Respondents Aged 12-17 Years, 2013-2014*\(^{a,b}\)

<table>
<thead>
<tr>
<th>Reasons for Use</th>
<th>95% CI</th>
<th>Any Cigars (n = 340)*(^{a})</th>
<th>Hookahs (n = 226)*(^{a})</th>
<th>Smokeless Tobacco (n = 180)*(^{a})</th>
<th>Snus Pouches (n = 64)*(^{a})</th>
</tr>
</thead>
<tbody>
<tr>
<td>I use [product] because they come in flavors I like</td>
<td>81.5 (77.9-85.0)</td>
<td>73.8 (68.3-79.4)</td>
<td>78.9 (73.4-84.3)</td>
<td>69.3 (62.6-76.0)</td>
<td>67.2 (55.7-78.6)</td>
</tr>
<tr>
<td>I use [product] because they are affordable</td>
<td>47.8 (42.9-52.6)</td>
<td>58.2 (52.7-63.6)</td>
<td>43.7 (36.5-51.0)</td>
<td>60.6 (52.6-68.6)</td>
<td>45.5 (32.1-58.8)</td>
</tr>
<tr>
<td>I use [product] because I can smoke/use them at times when or in places where smoking cigarettes isn't allowed</td>
<td>58.9 (54.1-63.7)</td>
<td>10.9 (7.1-14.8)</td>
<td>30.8 (24.1-37.5)</td>
<td>69.7 (63.3-76.0)</td>
<td>70.7 (58.7-82.7)</td>
</tr>
<tr>
<td>I use [product] because I like socializing while using them</td>
<td>40.3 (34.9-45.8)</td>
<td>57.0 (51.7-62.4)</td>
<td>79.6 (74.6-84.5)</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>I use [product] because it doesn't bother non-tobacco users</td>
<td>53.9 (48.1-59.8)</td>
<td>NA</td>
<td>NA</td>
<td>47.7 (40.4-55.0)</td>
<td>50.4 (39.7-61.2)</td>
</tr>
<tr>
<td>I use [product] because they might be less harmful to me than cigarettes</td>
<td>79.1 (75.2-83.0)</td>
<td>29.9 (25.3-34.5)</td>
<td>60.6 (53.9-67.3)</td>
<td>51.4 (44.3-58.4)</td>
<td>36.9 (24.3-49.6)</td>
</tr>
<tr>
<td>I use [product] because they might be less harmful to people around me than cigarettes</td>
<td>78.1 (74.3-81.8)</td>
<td>NA</td>
<td>NA</td>
<td>68.3 (62.1-74.6)</td>
<td>51.4 (38.7-64.2)</td>
</tr>
<tr>
<td>I use [product] because they don't smell</td>
<td>58.7 (54.2-63.2)</td>
<td>NA</td>
<td>NA</td>
<td>33.3 (27.4-39.1)</td>
<td>34.2 (22.1-46.4)</td>
</tr>
<tr>
<td>I use [product] because they help people to quit smoking cigarettes</td>
<td>59.5 (54.6-64.5)</td>
<td>9.9 (6.6-13.2)</td>
<td>24.2 (18.1-30.2)</td>
<td>26.8 (21.2-32.5)</td>
<td>25.1 (15.1-35.1)</td>
</tr>
<tr>
<td>I use [product] because people who are important to me use them</td>
<td>34.9 (30.6-39.2)</td>
<td>28.4 (23.5-33.2)</td>
<td>35.9 (30.3-41.6)</td>
<td>40.7 (32.9-48.6)</td>
<td>28.8 (17.8-39.7)</td>
</tr>
<tr>
<td>I use [product] because people in the media or other public figures use them</td>
<td>36.1 (31.5-40.7)</td>
<td>30.7 (26.1-35.4)</td>
<td>28.8 (22.7-35.0)</td>
<td>27.4 (20.8-34.1)</td>
<td>23.8 (13.2-34.5)</td>
</tr>
</tbody>
</table>

**Abbreviation:** NA, not asked.

* Past 30-day noncigarette tobacco users were asked to indicate (yes/no) whether particular reasons applied to their use of each specific product. A set of 14 items were asked of e-cigarette, smokeless tobacco, snus pouch, and dissolvable tobacco users; 10 were asked of cigar and hookah smokers; and a set of 9 were asked of pipe smokers and users of bids and kretek. Items can be accessed on the PATH Youth Baseline Questionnaire available in the eAppendix in the Supplement.

Individuals whose response was missing or responded “don’t know” to whether they used products in the past 30 days were excluded from the denominator, including n = 30 for e-cigarettes, n = 9 for cigars, n = 7 for hookahs, n = 13 for smokeless tobacco, and n = 2 for snus pouches. Estimates for pipe, dissolvable tobacco, bid, and kretek users are not presented owing to small denominators of past 30-day users (n <50). Cited sample sizes reflect unweighted Ns.

* Past 30-day users whose response was missing or who responded “don’t know” to any item regarding reasons for use were excluded from the denominator (range of missing for each item, by product: n = 0-5 for cigars, n = 0-4 for e-cigarettes and hookahs, n = 0-3 for smokeless tobacco, and n = 0-1 for snus pouches).

* Questions regarding reasons for use were asked separately for past 30-day use of traditional cigar, cigarillo, and filtered cigar. Any respondents reporting post 30-day use of 2 or more types of cigars were asked to report on reasons for use for each type of cigar separately. Responses were aggregated so that if the reason was endorsed for any of the types of cigars, it was counted overall as a positive response.

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**COMMENT & RESPONSE**

Use of Implantable Cardioverter-Defibrillators Among Medicare Patients

**To the Editor** Dr Pokorney and colleagues\(^{d}\) described low (8.1%) use of implantable cardioverter-defibrillators (ICDs) in older patients with myocardial infarction (MI) who met criteria for implantation. They inferred that many older patients with MI not referred for ICDs might have benefited with significant prolongation of life. They also suggested that modifiable system factors contribute to ICD underuse.

The authors’ perspectives contrast with those of Santangeli et al,\(^{e}\) who completed a meta-analysis of randomized trials of ICDs for the primary prevention of sudden cardiac death. That report showed ICD benefits declined with age and were no longer statistically significant after age 65 years. Although the mechanisms for the decreasing