Assessing Change in Use of Cigarettes and Non-Cigarette Alternatives Among College Students

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Background

- Although cigarette use in the United States declined from 2005 to 2011, use of non-cigarette alternatives, such as chewing tobacco, hookah, and e-cigarettes, have concurrently increased.
- Young adults have the highest rates of awareness and use of non-cigarette alternatives.
- Additionally, cigarette smokers are more likely than non-smokers to use both smoked and smokeless non-cigarette alternatives.
- Despite increased use of non-cigarette alternatives, relatively little is known about change in use of these products across time.

This study examined: 1) Change in use of cigarettes and non-cigarette alternative products in college students across a one-year period, and 2) Individual factors associated with increase in use.

Methodology

- Participants were a convenience sample of 765 students between the ages of 18 and 68 (M=24.87, STD=7.61).
- A 30-item online survey was administered twice, with approximately 14 months between each wave.
- At wave 1, 83.5% of participants were undergraduates students and 16.5% were graduate students.

Measures

- **Current Tobacco Use**
  - Current use of cigarettes, cigarillos/little cigars, cloves, hookah, smokeless (e.g., chewing tobacco, snuff or dip), snus (spitless tobacco) and e-cigarettes was assessed with the question, “During the past 30 days, on how many days did you use ___?”
- **Reasons for Use of Non-Cigarette Alternatives**
  - Reasons for use were assessed with one item asking “How have you used e-cigarettes?” with five options, ‘When smoking is not allowed’, ‘In addition to smoking although allowed’, ‘Instead of smoking although allowed’, ‘Means of cutting down’, and ‘To help quit smoking’.

Results

- To examine change in use of non-cigarette alternatives, separate models were conducted for those classified as current users of traditional cigarettes at wave 1 and those who were non-users. As shown in Table 1, there was a significant decrease from wave 1 to wave 2 in hookah use among current cigarette users and non-users. There was a significant increase in e-cigarette use across time, in both current cigarette users and non-cigarette users.
- Because only e-cigarette use showed an increase in prevalence across time, logistic regression analysis was used to examine factors associated with change in use of e-cigarettes. Results indicated that wave 1 current e-cigarette use (OR=3.8, CI=1.2-12.1), current cigarette use (OR=3.8, CI=1.5-9.3), and use of e-cigarettes to help quit smoking (OR=5.0, CI=1.2-21.4) increased the likelihood of e-cigarette use at wave 2.

Table 1. Change in Use

<table>
<thead>
<tr>
<th></th>
<th>Current Cigarette Users (n=158)</th>
<th>Non-Cigarette Users (n=603)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wave 1</td>
<td>Wave 2</td>
</tr>
<tr>
<td>Cigars</td>
<td>10.9</td>
<td>11.6</td>
</tr>
<tr>
<td>Hookah</td>
<td>29.3</td>
<td>16.3</td>
</tr>
<tr>
<td>Smokeless</td>
<td>4.1</td>
<td>2.7</td>
</tr>
<tr>
<td>Snus</td>
<td>3.4</td>
<td>2.4</td>
</tr>
<tr>
<td>E-cigarettes</td>
<td>14.4</td>
<td>25.3</td>
</tr>
<tr>
<td>Dissolvables</td>
<td>0.7</td>
<td>0.7</td>
</tr>
</tbody>
</table>

*Total sample (n=765)
**Bolded numbers indicate significance.

Implications

- The significant increase in e-cigarette use across the 14 month period among young adults is alarming.
- The use of e-cigarettes to help quit smoking as a significant predictor of increased e-cigarette use may in part be due to their marketing as alternatives to traditional cigarettes and as smoking cessation aids.
- Although limited short-term studies have shown that e-cigarettes may be useful for quitting traditional cigarettes, no studies have shown that e-cigarettes help people quit permanently.
- Given that traditional cigarette smokers are the most likely users of non-cigarette alternatives, it is possible that dual use will lead to prolonged use of traditional cigarettes rather than quitting.
- Future studies should examine whether e-cigarette use results in cessation for smokers or in sustained use of both cigarettes and e-cigarettes.