**Study Rationale**

- Electronic cigarettes (e-cigarettes) are increasing in popularity and use among US adults, in part because they may be perceived as a safer alternative to regular cigarette smoking.
- Low perceptions of harm and favorable attitudes are associated with e-cigarette use. The FDA has identified the need for research on consumer perceptions of e-cigarette harm and the impact of their labeling and marketing.
- Little is known about consumer perceptions on the addictiveness of e-cigarettes.

**Study Objective:**

1. To provide population estimates on perceptions of harm and addiction of e-cigarettes among US adults, in part because they may be perceived as a safer alternative to regular cigarettes.
2. To describe the factors associated with reporting cigarette use among US adults.
3. To detect unsupported claims and inform the FDA’s pending regulations of e-cigarettes’ relative harm to regular cigarettes and whether people can become addicted to them.
4. Continuous monitoring of perceptions of harms and addictions are needed to inform the FDA’s pending regulations of e-cigarettes, assess the impact of the proposed warning label on e-cigarettes, and detect unsupported claims.
5. Future studies need to address the diversity of device and nicotine concentration when measuring the perceptions of harm and addiction.

**Methods**

- Data Source
  - Data were collected via an online survey (HealthStyles) among a national representative sample from an online research panel of US adults (KnowledgePanel).
- Outcome Measures
  - Relative harm perception: “Are using e-cigarettes less harmful, more harmful, or about the same compared to using regular cigarettes?” (N=4,025)
  - Addiction perception: “Do you think people can become addicted to e-cigarettes?” (N=4,017)
- Factors Examined
  - E-cigarette use
  - “Have you ever tried any of the following products, even just one time... electronic cigarettes or e-cigarettes, such as Ruyan or NJOY?”
  - Cigarette smoking status
  - Current smokers: smoked 100 cigarettes or more in their lifetime and currently smoke everyday or some days
  - Former smokers: smoked 100 cigarettes or more in their lifetime and are not current smokers
  - Never smokers: had not smoked 100 cigarettes or more in their lifetime

**Analyses:**

- We used descriptive statistics and multinomial logistic regression analyses to estimate the prevalence of various perceptions of e-cigarettes and the characteristics of adults who expressed reduced harm perceptions. All analyses were weighted using the appropriate weighting variable to represent the population of US adults.

**Results**

**Table 1:** Adjusted Odds Ratios from the Multinomial Logistic Regression Model for the association of characteristics with perception of harm among US adults, 2012

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Adjusted OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1.4* (1.2 – 1.8)</td>
</tr>
<tr>
<td>Aware</td>
<td>5.2* (3.9 – 6.9)</td>
</tr>
<tr>
<td>Ever user</td>
<td>1.1* (2.0 – 4.6)</td>
</tr>
<tr>
<td>Current smoker</td>
<td>1.5* (1.2 – 1.9)</td>
</tr>
</tbody>
</table>

(Co-respond to never smokers)

**Table 2:** Adjusted Odds Ratios from the Multinomial Logistic Regression Model for the association of characteristics with perception of addiction among US adults, 2012

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Adjusted OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aware</td>
<td>1.5* (1.2 – 1.9)</td>
</tr>
<tr>
<td>Ever user</td>
<td>1.6* (1.1 – 2.4)</td>
</tr>
<tr>
<td>Current smoker</td>
<td>0.6* (0.5 – 0.9)</td>
</tr>
</tbody>
</table>

(Co-respond to never smokers)

**Summary and Future Directions**

- The study showed that 57% and 60% of US adults responded “don’t know” regarding their perceptions about harm and addiction of e-cigarettes, respectively.
- Ever use of e-cigarettes was statistically significantly associated with perceiving e-cigarettes as less harmful than smoking regular cigarettes (when comparing respondents who selected less harmful to those who responded don’t know).
- The findings suggest a gap in knowledge among US adults regarding e-cigarettes’ relative harm to regular cigarettes and whether people can become addicted to them.
- Perceptions of harm and addiction may be influenced by smoking regular cigarettes and (ever) use of e-cigarettes.
- Continuous monitoring of perceptions of harms and addictions are needed to:
  - Inform the FDA’s pending regulations of e-cigarettes
  - Assess the impact of the proposed warning label on e-cigarettes
  - Detect unsupported claims.
- Future studies need to address the diversity of device and the nicotine concentration when measuring the perceptions of harm and addiction.