Internal Medicine Patient Perception and Use of E-Cigarettes: A Pilot Study

Lyle Baker MD, Melissa McGinnis MD, Marwan Jaoudeh MD, Henry Le MD, Peter Madden MD, Todd Thomas MD, Kristin Rodriguez MPH LSSGB, Martina Jelley MD MSPH FACP

Department of Internal Medicine, University of Oklahoma School of Community Medicine, Tulsa, OK
Agenda

- Background
- Aims
- Hypothesis
- Methods
- Demographics
- Results
- Discussion
Electronic cigarette use (e-cigarette, e-cig, vape) has become increasingly popular over the past few years.

Currently, a limited number of studies exist that examine the perceived and actual safety and health impacts of using e-cigs.

The long-term consequences vs benefits of e-cig use are poorly understood.

Despite the lack of research on potential adverse health effects of e-cig use, many continue to initiate use.
Aims

1. Determine the prevalence of e-cigarette use by patients in the OU-Tulsa academic internal medicine ambulatory clinic.

2. Determine the perceptions of patients in the OU-Tulsa academic internal medicine ambulatory clinic regarding the health effects and safety of e-cigarette use.
Hypotheses

• We hypothesize that most participants will believe that e-cigarettes are safer than traditional cigarettes.

• We hypothesize that patients who have a history of e-cig use will consider e-cigs to be safer and to have less adverse health risks in comparison to those who have never used e-cigs.
Methods

- Surveyed clinic patients regarding their perceptions of e-cigarette use in comparison to traditional cigarette use with respect to safety and adverse health effects.

- Collected demographic information from each participant.

- Inclusion Criteria: Smoking and non-smoking male and female patients aged 18+ were invited to participate in the survey while at their regularly scheduled clinic appointment.

- IBM SPSS v.22 used for data analysis
Survey Questions of Interest

13. Have you ever used e-cigarettes (e-cigs) or vaped?
   □ Yes, continue to question 14
   □ No, continue to question 22

14. Do you currently use e-cigs or vape?
   □ Yes, continue to question 15
   □ No, skip to question 22

24. How bad for your health do you think e-cigs are to use?

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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Very bad</td>
<td>Neither bad nor good</td>
<td>Not at all bad</td>
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25. Which do you think is safer for your health to use: Cigarettes or e-cigs?

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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Cigarettes are much safer</td>
<td>They are equally safe</td>
<td>E-cigs are much safer</td>
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26. Do you think using e-cigs will have a negative impact on your health?
   □ Yes
   □ No
Demographics (n=207)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>28</td>
</tr>
<tr>
<td>Female</td>
<td>72</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>African-American/Black</td>
<td>18</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
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<tr>
<td>Asian</td>
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<td>Caucasian</td>
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<tr>
<td>Ethnicity</td>
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<tr>
<td>Hispanic/Latino</td>
<td>8</td>
</tr>
<tr>
<td>Not Hispanic/Latino</td>
<td>92</td>
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<tr>
<td>Age Categories</td>
<td></td>
</tr>
<tr>
<td>18-25</td>
<td>6</td>
</tr>
<tr>
<td>26-44</td>
<td>22</td>
</tr>
<tr>
<td>45-64</td>
<td>38</td>
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<tr>
<td>65+</td>
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<table>
<thead>
<tr>
<th>Characteristic</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Highest Education Level Completed</td>
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<tr>
<td>&lt;=8th grade</td>
<td>5</td>
</tr>
<tr>
<td>Some high school</td>
<td>7</td>
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<tr>
<td>High school diploma/GED</td>
<td>28</td>
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<tr>
<td>Some college</td>
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</tr>
<tr>
<td>Associate degree/Vo/Tech</td>
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<tr>
<td>Bachelors</td>
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<tr>
<td>Masters</td>
<td>6</td>
</tr>
<tr>
<td>Professional (MD, JD)</td>
<td>2</td>
</tr>
<tr>
<td>Doctorate (PhD, EdD)</td>
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</tr>
</tbody>
</table>
Results: Prevalence of e-cigarette use

EVER VAPER
- Yes: 25%
- No: 75%

CURRENT VAPER
- Yes: 15%
- No: 85%
Results: Prevalence of traditional cigarette use

EVER SMOKER
- Yes: 56%
- No: 44%

CURRENT SMOKER
- Yes: 29%
- No: 71%
Results

- 71.6% of respondents were aged 45+

- Ever vapers were more likely to have smoked traditional cigarettes in comparison to never vapers (p<0.001)

- When accounting for the sex, race, ethnicity, and education level of the surveyed patients, there was no statistically significant difference in perceptions of adverse health effects or safety of e-cigarettes.
Results: How bad for your health do you think e-cigarettes are to use?

• 5-point Likert scale
  • 1=not at all bad, 5=very bad

• 12% of patients reported believing that e-cigarettes are not bad (not too bad or not bad at all) for your health.

• 20% of patients reported a neutral view (neither bad nor good).

• 68% of patients reported believing that e-cigarettes are bad (bad or very bad) for your health.
Statistically Significant Findings:

- An association was found between patient perception of the adverse health effects of e-cigs and their usage history.
- Patients with a history of e-cig use were less likely to believe that e-cigarettes are bad for your health ($p<0.001$).
- Whereas, patients with no history of e-cig use were more likely to believe that e-cigs are very bad for your health ($p<0.001$).

Figure: Perceived adverse health effects of e-cigarette use by vape experience (n=141)
Results: Do you think using e-cigarettes will have a negative impact on your health?

- Yes/No answer choices

- The majority of respondents (82.4%) reported believing that using e-cigarettes will have a negative impact on their health.

- 72.2% of all responders with a vaping history reported believing e-cigarette use will have a negative impact on their health.

- 86.7% of all responders with no vaping history reported believing e-cigarette use will have a negative impact on their health.
Results: Which do you think is safer for your health to use, cigarettes or e-cigarettes?

- 5-pt Likert scale
  - 1=cigarettes are much safer, 5=e-cigarettes are much safer

Figure: Perceived safety of e-cigarettes vs. cigarettes (n=125)
Statistically Significant Findings:

- Respondents aged 18-25 are more likely to report believing “e-cigarettes are much safer” than other age groups ($p=0.035$).

- Respondents with a history of vaping were more likely to report believing e-cigarettes are safer than traditional cigarettes, in comparison to respondents with no history of vaping ($p=0.005$); see chart below.

Figure: Perceived safety of e-cigarettes vs. cigarettes by respondents’ vape experience.
Discussion

• Despite e-cigarette use typically being under-reported, our study sample showed a greater-than-national-average percentage of patients who have used e-cigarettes (24.6% adults at OU IM; 12.6% adults in the U.S.).

• Age of participating respondents likely contributed to a lower reported rate of e-cigarette use, as e-cigarette use declines as age increases.

• There are differences among some groups in the perceptions of adverse health effects and safety of e-cigarette use in our internal medicine ambulatory clinic.
Limitations

• Though our sample exceeded 200 patients in the internal medicine practice, the self-administered survey was missing data for some questions.

• The current language for e-cigarettes was used (e.g., “liquid/juice” for the e-cigarette solution was confusing to some respondents.
  • Anecdotally, older adults (aged 45+) confused e-cig juice with the breakfast beverage.

• Additionally, several participants wrote comments on the surveys that could not be analyzed in this study.
Future Plans

- As our participants reported a greater-than-national average percentage of having tried e-cigs, we see a need to address the uncertainty of the safety and health effects of e-cigarettes within our clinic.
  - Patient education
  - Provider education
Future Plans

• The study team plans to revise the current survey and administer a new electronic version to primary care patients in Internal Medicine and Family and Community Medicine at OU-Physicians in Tulsa, OK.
Acknowledgements

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References

Questions