Stress coping strategies among college students: Associations with e-cigarettes and physical activity.

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Background

- The use of e-cigarettes has increased exponentially among young adults.
- In 2014, 21.6% of US adults between the ages of 18-24 years reported ever trying an e-cigarette.¹
- Estimates of ever use of trying e-cig among college students range from 4.9%²- 29%.³
Public Health Significance

- American Heart Association\(^4\) and American Lung Association\(^5\) issued position statements asserting e-cigs may prime young adults for nicotine addiction.
- Health consequences of e-cigarette smoking is under-researched.\(^4\)
What are e-cigarettes?

Parts of an Electronic Cigarette

- Mouthpiece
- Heating element/Atomizer heats the "juice" to make vapor.
- Cartridge (tank) holds the liquid "juice."
- Many devices have a switch to activate the heating element.
- Battery
- Microprocessor
- Some devices have a light-emitting diode on the end to simulate the glow of a burning cigarette.
E-cigarettes and perceived stress

- Cigarette users report greater perceived stress than non-cigarette users.\(^6,7\)
- The perceived novelty and accessibility of e-cigs\(^8\) may make e-cigs a convenient way for college students to manage stress.
- Transition from high school to college may be stressful.\(^9\)
- Students may adapt to stress using readily available coping strategies, including engaging in unhealthy lifestyle choices (e.g. tobacco and/or nicotine use, sedentary behavior).
Research Question

- Do ever e-cigarette smokers and never e-cigarette smokers report different levels of:
  - Perceived Stress (PSS)
  - Physical Activity
    - IPAQ and 1 question about using physical activity to manage stress
  - Sedentary Activities to manage stress
    - 1 item from APA Stress in America Survey
Methods

- College students (N=230) completed an anonymous online survey.
- Recruited through social media and classroom announcements.
- Separated into two groups based on yes/no response to following question:
  - “Have you ever tried an e-cigarette, even one or two puffs?”
### Sample

<table>
<thead>
<tr>
<th></th>
<th>Ever tried e-cigs</th>
<th>Never tried e-cigs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BMI</strong></td>
<td>22.5</td>
<td>23.3</td>
</tr>
<tr>
<td><strong>AGE</strong></td>
<td>20.9 years</td>
<td>21.1 years</td>
</tr>
<tr>
<td><strong>% FEMALE</strong></td>
<td>58.3% (n=49)*</td>
<td>74.0% (n=108)*</td>
</tr>
<tr>
<td><strong>TRIED CIGARETTES</strong></td>
<td>43.9% (n=54)</td>
<td>56.1% (n=69)</td>
</tr>
</tbody>
</table>

*\(X^2 (1,230)=7.03; \ p < .05\)
Ever e-cigarette users reported significantly lower levels of perceived stress than never e-cigarette users [F(1,228) =3.7; \( p<.05 \)].
Ever e-cigarette users were more likely than never e-cigarette users to utilize sedentary behaviors as a way to manage stress \[X^2 (1,230)=5.08; \ p <.05\].

“Do you watch TV/Netflix/surf the internet to relieve or manage stress?”

**Never tried e-cigarettes**
- Yes: 67%
- No: 33%

**Ever tried e-cigarettes**
- Yes: 81%
- No: 19%
“Do you exercise, walk or play sports to relieve or manage stress?”

No significant difference between groups with regards to utilizing physical activity as a way to manage stress \([X^2 (1,230)=1.36; p > .05]\).
Results: Minutes of Moderate Physical Activity/Week

- No significant difference in minutes of physical activity per week between e-cig users and non-users [F(1,228)=0.3, p >.05]
College students who have ever tried an e-cigarette were more likely than college students who never tried an e-cigarette to report coping with stress with sedentary activities.

The sample size in this pilot study was relatively small; future studies are needed to examine whether the frequency of use (ever tried versus regular use) shows different associations with stress management.
Limitations

- Sample size
- Classification of “ever used e-cigarettes” and “never used e-cigarettes”
  - Individuals who smoking e-cigarettes every day may present different scores on the outcome measures compared with someone experimenting or using socially
Ever e-cigarette users may adapt to stress with distraction or quick fix coping strategy more than never e-cigarette users.

Methods of managing stress result in a variety of behaviors that, over time, may influence health outcomes.

Understanding differences in adaptive health behaviors among college students may assist in the development of primary prevention programs for young adults.
References

Thank you!

• Dr. Krista Ranby
• Participants