E-cigarette and Tobacco Use in the U.S. Adolescent Population: Decreasing Use Through Early and Targeted Education Using the Anti-Smoking Health Education Series (ASHES) Curriculum

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Disclosures

- Pedram Daraei: none
- Charles Moore: none
Anatomy of the E-cig

Prevalence of E-cig Use in Adolescents

- **United States**
  - In 2011, 3.1-3.3% of adolescents had ever used e-cig, while 1.1% were current e-cig users.
  - In 2012, 6.5-6.8% of adolescents had ever used e-cig, while 2.0-2.1% were current e-cig users.

- **International**
  - South Korea (2011): 0.5% of middle and high school students were ever e-cig users.
  - Poland (2012): 23.5% of high school students were ever e-cig users, 8.2% used in the past 30 days.
Prevalence of E-cig Use in Adolescents

- Tobacco behaviors\(^5\)
  - Of current e-cig users, 75.0% were traditional cigarette smokers
  - 9.2% were never traditional cigarette smokers
  - Prevalence of EtOH, marijuana, cigars, or other smokeless tobacco use did not differ between e-cig users and t-cig users
  - Have parents or partners who smoked t-cigs were significant predictors of ever and current e-cig use

Advertisements

- Target Rating Points (TRPs) from The Neilsen Company\(^6\)
  - Youth exposure to TV e-cig ads increased 256.0% from 2011 to 2013
  - TRP peak of 347
How many TRPs necessary?

CDC recommends 800 quarterly TRPs for anti-tobacco mass-media campaigns.

Sustained low levels in the 300s may also work.

Do E-cigs Harm?

- Contaminants
  - Polycyclic aromatic hydrocarbons
  - Tobacco-specific nitrosamines
  - Volatile organic compounds
  - Propylene glycol
  - Glycerin

- Exposure compared to t-cigs
  - High nicotine e-cig conditioned media induced a gene expression pattern similar to t-cig conditioned media and whole cigarette smoke exposure in cell cultures
  - The data are still controversial and minimal at best
Perceived Harm

ASHES Curriculum

- Created by Emory School of Public Health Students
- Pilot program at after-school community centers in metro Atlanta
  - Intended for elementary school (ages 6-11)
  - Expanding to public schools
- Six lessons (20-30 min each) intended to discourage students from smoking and to provide information to families regarding smoking cessation
ASHES Curriculum

- Evaluation: based on worksheet exercises
- Sustainability:
  - Alteration of curriculum based on initial pilot session
  - Long-term outreach as part of the medical school and school of public health, in conjunction with Grady Health System and the HEALing Community Center

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### Overview of Lessons and Activities

<table>
<thead>
<tr>
<th>Lesson #</th>
<th>Lesson Title</th>
<th>Activities</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>What is Tobacco?</td>
<td>Smoking Key Terms Worksheet 1.1</td>
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<td>What’s in a Cigarette? Worksheet 1.2</td>
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<td>2</td>
<td>What are the Health Effects of Smoking?</td>
<td>When I Grow Up Worksheet 2.1</td>
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<td>Group Discussion</td>
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<td>3</td>
<td>Navigating Peer Pressure</td>
<td>What Would You Do? Worksheet 3.1</td>
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<td></td>
<td></td>
<td>Role-Play Scenarios</td>
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<tr>
<td>4</td>
<td>Smoking and your environment</td>
<td>Role-Play Scenarios</td>
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<tr>
<td>5</td>
<td>Tobacco in the Media</td>
<td>Tobacco in the Media Worksheet 5.1/5.2</td>
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<td></td>
<td>Making an Advertisement</td>
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<tr>
<td>6**</td>
<td>Smoking-Free Pledge</td>
<td>Group Discussion</td>
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<tr>
<td></td>
<td></td>
<td>Smoke-Free Pledge Worksheet 6.1</td>
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**ASHES Results**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answers (n)</th>
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<tbody>
<tr>
<td>1</td>
<td>True (10), False (0)</td>
</tr>
<tr>
<td>2</td>
<td>Nicotine (8), Don't know (2)</td>
</tr>
<tr>
<td>3</td>
<td>Smoking is harmful (10)</td>
</tr>
<tr>
<td>4</td>
<td>True (3), False (5), Don't know (2)</td>
</tr>
<tr>
<td>5</td>
<td>True (9), Don't (1)</td>
</tr>
<tr>
<td>6</td>
<td>True (9), False (1)</td>
</tr>
<tr>
<td>7</td>
<td>True (10), False (0)</td>
</tr>
<tr>
<td>8</td>
<td>Yes (0), No (10)</td>
</tr>
</tbody>
</table>

**Mean**: 92.7%

**Conclusions**

- E-cigarette use is becoming more and more prevalent
  - Most concerning is the increase in use amongst adolescents
- Increased advertising campaigns
  - Targeting youth is a major concern
- Unknown consequences of e-cig use
  - May be beneficial in comparison to t-cigs, but unknown compared to non-smokers
- ASHES curriculum
  - Inexpensive, sustainable, easily transferable method of educating children and adolescents on the dangers of nicotine products, including e-cigs
References

   PubMed PMID: 24604023.


THANK YOU