Vaping: Outline of the Problem and the Role of RDH

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Section D200
What is Vaping?

Vaping is the inhalation of an aerosol, often referred to as vapor, which is produced by an e-cigarette or similar device.

How do vaping devices work?

Most e-cigarettes consist of four different components, including:

- A cartridge/reservoir/pod (holds a liquid solution containing varying amounts of nicotine, flavorings, and other chemicals)
- Atomizer (heating element)
- Power source (usually a battery)
- Mouthpiece

With every inhalation from the mouthpiece, the atomizer heats the liquid in the cartridge to its boiling point. The liquid then turns to vapor and is drawn into the user's mouth.

[https://www.cdc.gov/tobacco/basic_information/e-cigarettes/about-e-cigarettes.html](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/about-e-cigarettes.html)
Vaping in the USA

- Vaping increased from 2017-2018 with 3.6 million adolescent users.
- Especially prevalent between high school youth.
- E-cigarette use will continue to rise.
- Many users see vaping as a healthy alternative and are unaware of what is being inhaled.

Effects of Vaping

- Lung illness.
- Cardiovascular injury
- Negative effects on resting heart rate, blood pressure and the cells that line the blood vessels.
- Harmful to the brain of the developing adolescent.

https://www.cdc.gov/tobacco/basic_information/e-cigarettes/about-e-cigarettes.html

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“Prevalence and Correlates of JUUL Use Among A National Sample of Youth and Young Adults.”

Background Information
- 13.9% of youth used an electronic nicotine delivery system within the year.
- 7.5% reported use within the last month.
- The JUUL pod contains the same amount of nicotine as a pack of cigarettes.

Methods of Study
- Cross-sectional observational type study.
- 14,379 participants from ages 15-34
- Participants were surveyed about JUUL use, tobacco use, electronic nicotine delivery system, harm perceptions, sensation speaking and demographic characteristics.

Purpose
To determine the prevalence of JUUL use among youth and young adults in the United States of America and identify the correlation between prevalence of JUUL use and demographic and psychosocial factors.

https://www.cdc.gov/tobacco/basic_information/e-cigarettes/about-e-cigarettes.html
**Results**

The prevalence of JUUL use among research participants in the 15-17 year old age group, reaches almost 10%, which is higher than both of the older age categories.

**Conclusion**

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“Youth Perspectives on Concurrent Smoking and Vaping: Implications for Tobacco Control”

**Background**
- The increasing popularity of electronic nicotine delivery systems (ENDS) or e-cigarettes among young adults
- The increase of nicotine addiction.

**Purpose**
- Youth's experiences and reasons for ENDS initiation and use
- Initiation pathways by self-reported use and age of initiation of ENDS and cigarettes including smoking to vaping, vaping to smoking, and vaping only
- The meanings young people ascribe to their dual use practices and how those meanings relate to the tobacco control environment.

**Method of the study**
- A cross-sectional qualitative interview study.
- Gathered 26 out of 52 interviews of young dual users
- The young adults were between the ages of 15-25
- It examined the meaning, role, and practices of nicotine and tobacco use among youth and young adults
- Participants were recruited on the street, through online social media advertising, and by referral.
Results and Conclusion

• The results were divided into topics such as the Utilitarian meaning of dual-use: smoking Reduction/Cessation, Tobacco 21 laws, and Smoke-free air laws. Each topic was supported by a participant’s point of view.

• In topic of “Reduction/Cessation”, dual users had a positive outcome because vaping has helped them to lower their intake of nicotine dose as they can manage how much nicotine they smoke compared to conventional cigarettes.

• Secondly, dual users agreed to the smoke-free air laws designed to protect people from second-hand cigarette smoke. They believe no one should be forced to breathe in their secondhand smoke.

• Lastly, Tobacco 21 law was the most controversial topic for these young adults. Implementing Tobacco 21 law was made to raise the legal age to purchase nicotine and tobacco from 18 to 21 years old.

The authors concluded that the study suggests that dual users of ENDS (Electronic Nicotine Delivery Systems) and cigarettes overwhelmingly perceive the utility of dual-use and view vaping as a tool for reducing smoking-related harm in the near term and facilitating quitting smoking in the long term. Although this study cannot predict the future.

https://vapingdaily.com/smoking-effects/young-adults/
“Nicotine Concentration of E-cigarettes Used by Adolescents”

**Background**
- Adolescents are vulnerable to nicotine’s addictive effects.
- Nicotine dependence can develop at a faster rate.
- Brain development is compromised in youth.
- E-liquids have not been studied enough to determine its adverse effects.

**Purpose**
- Assess the nicotine concentration in past-month users’ e-cigarette.
- To determine the portion of users unaware of the nicotine concentrations in their e-cigarette.
- To determine if demographic factors had an impact on the amount of nicotine concentration used.

**Design**
- Confidential survey was created to assess demographic features and differentiate types e-cigarette users.
- Sample included a mixture of middle and high school students.
- 5,133 students voluntarily participated.
- 3 types of users were differentiated- nicotine (6 mg-<30 mg) e-liquid users, nicotine free e-liquid users and unknown nicotine concentration users.
- Survey also assessed sources of e-cigarette acquisition.
Results and conclusion

- Health is still compromised despite using nicotine free e-liquids.
- Adolescents were more likely to transition from nicotine free to nicotine concentrated liquids.
- Use of e-cigarettes can cause nicotine dependence at a younger age, and may alter brain development.
- 34.7% of adolescents use nicotine concentrated liquids. An alarming
- 34.1% of adolescent users were unaware of the concentration on nicotine in their e-cigarettes.
- Friends are the most common reported source of e-cigarette acquisition.
- Adolescents are likely to be unaware of nicotine exposure because they do not see the packaged item, rather accept the e-cigarette as a social norm.
Disease Prevention

- Ask patients of current or past history of vaping, smoking, or any tobacco use.
- Advocate for change-laws for regulation to limit e-cigarette access to youth.

Patient Education

- E-cigarettes are a safe alternative, right? WRONG!
- “I smoke because it relieves my stress.”
- “I don’t smoke, I vape.”

https://www.cdc.gov/mmwr/volumes/67/wr/mm6745a5.htm?s_cid=mm6745a5_w
Implications On Patients and Community

- Increased risk of health problems throughout life.
- As promotion of vaping continues, prevalence only increases.
- Dependence can settle early in adolescence and become more difficult to cope with.

https://www.amazon.com/Harmful-Effects-Vaping-Laminated-Poster/dp/B07X44JQ4M
References


