

# How Do Personality and the Media Shape Perceived Risks and Benefits of E-cigarettes?

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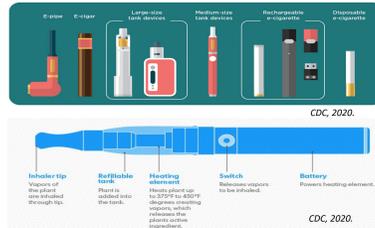


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## Background

### What is Vaping?

Vaping is a common term to describe the use of an electronic nicotine delivery system (ENDS) products.

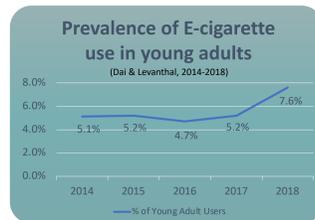


### How does it work?

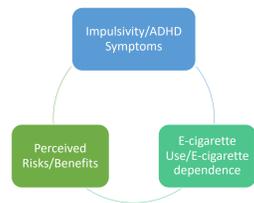
In ENDS products, a sensor triggers a vaporizer to heat a small amount of liquid flavoring that is inhaled into the lungs.

### Prevalence

By 2021, the number of adults who vape may reach 55 million.



### The Acquired Preparedness Model



The acquired preparedness model (APM) contends that personality traits influence expectancies about substances, which, in turn, predict level of substance use (McCarthy, Miller, & Smith, 2001; Smith & Anderson 2001).

Consistent with the APM, Doran et al. (2013) found that those with higher impulsivity symptoms, evidenced a greater chance of smoking initiation significantly mediated by positive expectancies but not negative expectancies.

## Hypotheses & Research Question

**H1** Students who score higher in impulsivity will perceive fewer risks and more benefits of ENDS and, in turn, will be more likely to use ENDS products and be dependent on them.

**H2** ENDS users who score higher in ADHD symptoms will be more likely to use ENDS to concentrate

**RQ** How have recent media reports of ENDS-related illnesses affected students' attitudes and behaviors around ENDS?

## Method

### Survey measures

**Barratt Impulsiveness Scale**  
Patton et al. (1995)

**Adult ADHD Self-Report**  
Adler et al. (2006)

**Risks/Benefits of E-cigarettes**  
Copeland et al. (2017)

**E-cigarette use**  
Hinds et al. (2016)

### Focus Group Questions

•What have you heard in recent news articles about vaping?

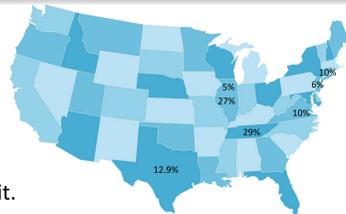
•To what extent do recent news articles affect your decision to vape/not vape?

•Do you find that vaping can be helpful to the completion of assignments?

## Participants & Procedure

### Survey (N = 1319)

An online survey was distributed to undergraduates on 7 campuses in the United States. Participants received research or extra credit.



### Race/Ethnicity

- American Indian .2%
- Asian 7.9%
- Black/African American 9.2%
- Caucasian 74.7%
- Other 3.6%
- Multiracial 3.8%

### Gender

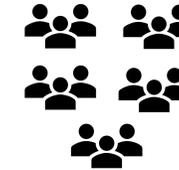
- Female 68%
- Male 30%
- Other 1%

### Class Year

- 1<sup>st</sup> Year/Freshman 49.8%
- 2<sup>nd</sup> Year/Sophomore 24.2%
- 3<sup>rd</sup> Year Junior 15.1%
- 4<sup>th</sup> Year Senior 9.3%
- 5<sup>th</sup> Year or more 1.8%

### Focus Group (N = 42)

At one of the sites, students were recruited for one of five focus groups through the online survey, announcements to the campus, and flyers. Participants received a gift card to an on-campus eatery.



### Race/Ethnicity

- Asian/ Asian American 11.9%
- Black/African American 4.8%
- Caucasian 64.3%
- Hispanic or Latino 7.1%
- Other 11.9%

### Gender

- Female 67%
- Male 33%

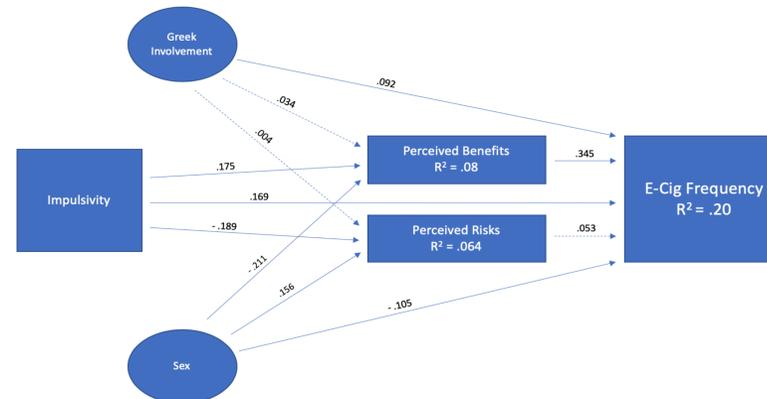
### Class Year

- First Year 7%
- Sophomore 26%
- Junior 19%
- Senior 48%

## Results

### H1: APM & E-cigarette Frequency

- There was a positive association between impulsivity and perceived benefits and an inverse association with perceived risks.
- Although perceived benefits mediated the relation between impulsivity and e-cig frequency, perceived risks did not. **Therefore, I found mixed support for my first hypothesis.**
- Greek-life involvement was not a predictor of participants' perceived benefits or risks.
- There were significant associations between sex and perceived benefits and risks.



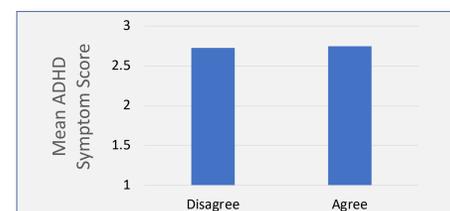
### H1: APM & E-cig Dependence

Not pictured

- The same patterns emerged with e-cigarette dependence as an outcome, **providing mixed support for the first hypothesis.**

### H2: Concentration Motives

- ADHD symptom scores were not correlated with endorsement of using ENDS to concentrate ( $r = .00, p = .97$ ), therefore, **I did not find support for my second hypothesis.**
- Below are mean ADHD symptom scores for people who "agreed" or "strongly agreed" that they used ENDS to concentrate and those who "disagreed" or "strongly agreed". The means did not differ.



Theme	Sub-Theme	n	Representative Quote
Information Heard In Media	Lung injuries/deaths	8	"People are getting lung infections and some are dying."
	Bootleg Cartridges/products	6	"I've heard that it's the homemade weed cartridges, not the JUUL, that's putting kids in the hospitals."
	Unreliable/Confusing Media Reports	3	"The news is using the incorrect device to kind of combat this vaping issue or they keep calling it vaping. I don't even think we call it vaping, those of us that smoke THC cartridges."
Effects on Vaping Habits/ Behavior	Noticing Physical effects	6	"I just feel like my throat really hurt. And like, you know, I just feel sick, more sick than I would without it."
	Gave me a reason to quit/cut down	7	"I've been like trying to quit JUULing now too just because of all the news and everything"
Unknown Information about Vaping	Long term-effects	4	"Nobody really knows the full effects of the JUUL"
	Unknown ingredients of cartridges	1	"We buy these pods and we have no idea what's in them."

### RQ: Effects of Media Exposure on ENDS

- Thematic analysis revealed three main themes, each with subthemes, shown above.
- Media increased awareness of the risks, but some students were skeptical about some of the information provided in the media.
- There was interest in knowing more about the long-term effects of ENDS product use and the ingredients in the pods.

## Discussion

### H1: APM & E-Cigarette Frequency /Dependence

- There was a positive correlation between both e-cigarette frequency and e-cigarette dependence and impulsivity that was significantly mediated by perceived benefits. Perceived risks as a mediator was insignificant.
- This was consistent with Doran et al.'s (2013) study which found that the positive expectancies mediated the correlation between sensation seeking and the likelihood of smoking initiation, but negative expectancies did not.

### H2: ADHD and Concertation Motives

- There was no correlation between ADHD symptoms and using ENDS to concentrate. Perhaps participants with ADHD symptoms are already being adequately treated through medication or other interventions and aren't turning to ENDS use to aid in concentration.
- Reported motives for ENDS use differed in the focus groups versus the survey. Focus group participants reported using ENDS to concentrate, although their ADHD symptom scores were not known. Focus group participants reported using or seeing people vaping in class or in the library. ENDS was endorsed most in academic settings.

### RQ: Effects of Media Reports on Participants' ENDS

- Many people reported concern over media reports. Media reports led many users to change their vaping behaviors or try to stop their use altogether.
- People reported a strong desire to obtain information about both the effects and ingredients in e-cigarette cartridges. More research is necessary in coining the long-term effects and chemical make up of the e-cartridges.

### Limitations

- Participants might not report their behavior truthfully in self-reports.
- Some people did not participate as willingly or as openly as others in the focus groups, perhaps because they were concerned about others judging their behavior.

## Implications and Future Directions

### Effective Intervention Methods

- There is limited research done on intervention methods for young adults trying to quit ENDS use.
- Although intervention resources for adults trying to quit ENDS use has been slowly growing, research on which methods are the most effective is lacking.

### Unknown Information

- The long-term effects of ENDS use/vaping remain unknown.
- There is still a widespread lack of knowledge of some of the harmful ingredients that go into ENDS products. Making people aware of the known harmful products that go into ENDS products is important for users to know for their behavioral decisions regarding vaping.

## Acknowledgements

I would like to acknowledge my thesis advisor, Professor Holt, for her dedication and ongoing support throughout my thesis process. I would also like to acknowledge Carolyn Najarian for collaborating with me on data collection; Asa Wint and Brooke Agro for assisting in the focus group recruitment and transcription; and lastly, Professor Senland and the Senior Thesis Colloquium for their support.