

### Significance of Problem

- The college-aged demographic is especially at risk for adverse effects surrounding the usage of electronic vaping devices given the deficit in published research regarding the use of vaping products (Kenne, Fishbein, Tan, & Banks, 2017).
- In 2020, 19.6% of high school students (3.02 million) and 4.7% of middle school students (550,000) reported current e-cigarette use (Wang, Neff, Park-Lee, Cullen, King, 2020).
- Many users do not understand the extent of potential harm they are exposed to through vaping usage, given that many perceive it as less risky because of the product's original role as a cessation product (Katz, Erkinen, Lindgren, Hatuskami, 2019).
- 3.6 million U.S. youths still currently used e-cigarettes in 2020, and among current users, more than eight in 10 reported using flavored e-cigarettes (Wang, Neff, Park-Lee, Cullen, King, 2020).

### Purpose

The main objectives of this study were to:

- Assess the attitudes and beliefs related to the use of electronic vaping devices held by college students at a private university
- Better understand the use despite adverse health effects
- Identify interventions aimed at preventing vaping and promoting cessation

### Theoretical Framework

Social learning theory and the transtheoretical model (Bandura, 1986; Prochaska & Velicer, 1997)



### Methods

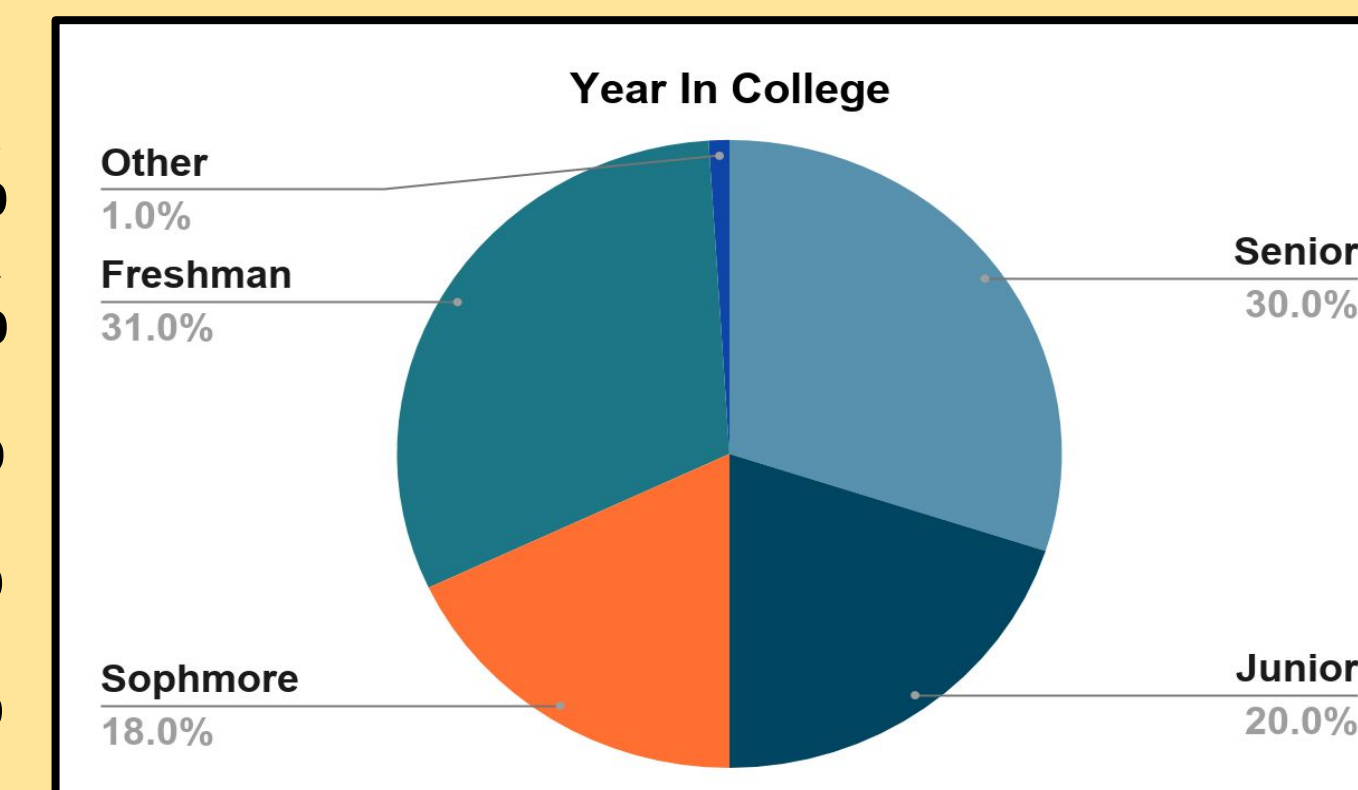
- Approval:** University IRB
- Setting:** Private, faith-based, Midwestern university
- Design:** Cross-sectional, mixed methods
- Sample:** Undergraduate students  
Survey:  $N = 487$ , response rate 61%  
Focus groups:  $N = 34$ , 3 groups with 8-10 students in each
- Quantitative:** Online investigator-developed survey via SurveyMonkey®
- Qualitative:** Focus groups with open-ended questions
- Analysis:** Survey data were analyzed using SPSS 25 and content analysis used with verbatim transcripts

Senior BSN Students: Madison Ling, Keegan Maris, Isabella Portugal  
 Juniors: Shamus Marr, Alaina Meyer, Lexi Przybylski, Kaylann Woolever  
 Sophomores: Asia Janeczek, Hannah Manske, Estelle Niego  
 Theresa A. Kessler, PhD, RN, ACNS-BC, FAAN; Lynette Rayman, DNP, RN, CNE  
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### Sample Characteristics

Survey ( $N = 487$ )

- Female: 66%
- White: 82%
- Greek-affiliated: 23%
- Student athlete: 23%
- Vaped: 18% (Last 30 days)

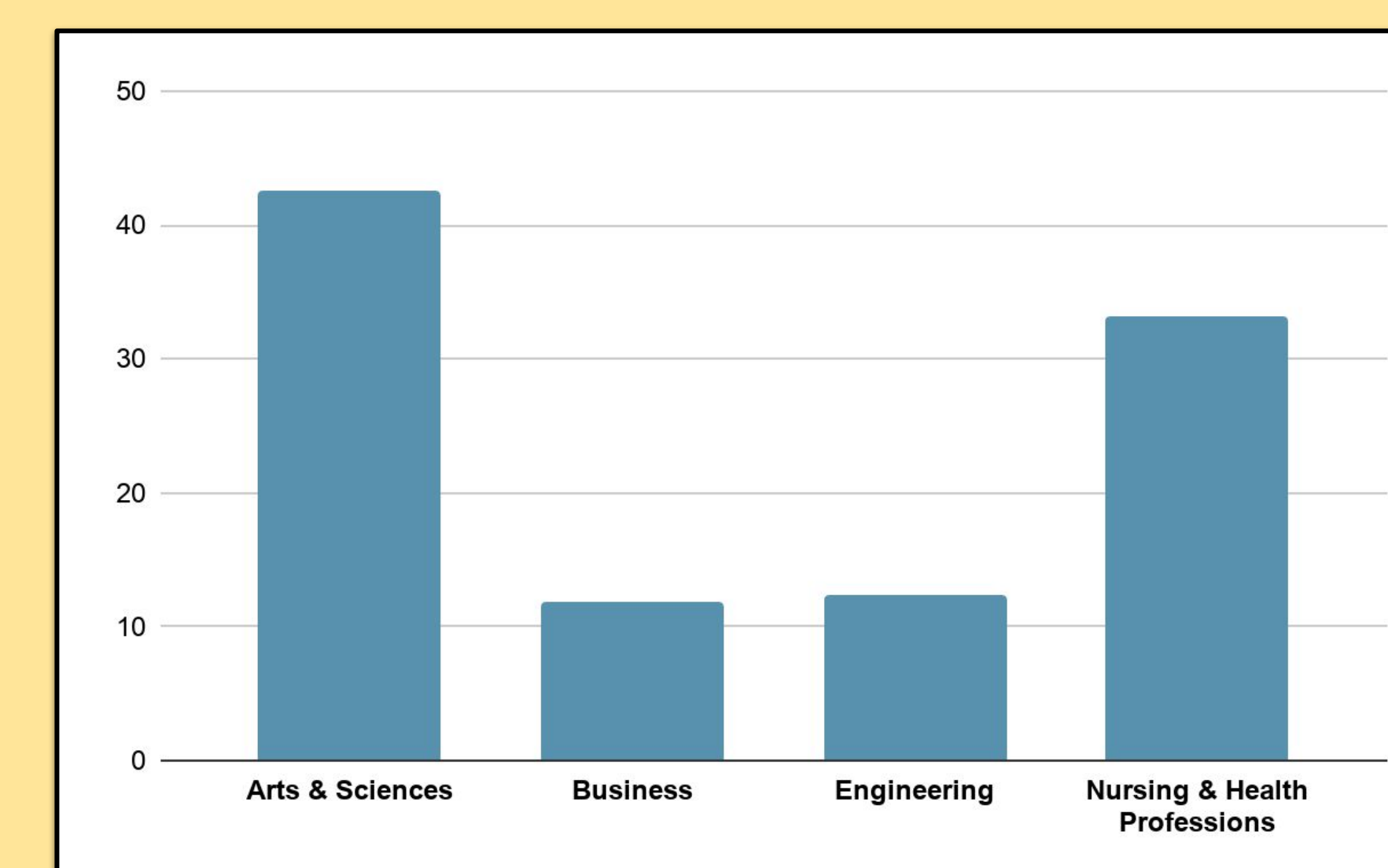


Focus Groups ( $N = 34$ )

- Female: 64%
- White: 76%
- Freshman: 68%
- Age:  $M = 18.84$ ,  $SD = 1.14$
- Current or past vapers: 60%

### Percent of Vaping by College

( $N = 487$ )



### Vaping Behaviors ( $N = 487$ )

Reasons for Use

- "Relax and enjoy" 41%
- "Curiosity" 20%
- "Cigarette cessation" 16%

Vaping Perceptions

- "I will feel more relaxed" 71%
- "I will become less healthy" 69%
- "I will lose friends" 8%
- "I am disappointed if a friend vapes" 65%

Usage in last 30 days

- Used daily 41%
- Used between 6 – 29 days 25%
- Used only between 1 – 5 days 27%

### Description of Vaping Use

Characteristics of Those Who Reported Ever Using Vaping Devices ( $N = 487$ )

- Year in school provided differences in vaping use: Freshmen – 39%, Sophomore – 53%, Junior – 61%, Senior – 52% ( $\chi^2 = 8.523$ ,  $p = .074$ )
- GPA demonstrated significant differences in vaping use: GPA < 2.49 = 64%, 2.5 – 2.99 = 66%, 3.0 – 3.49 = 61%, 3.5 – 3.99 = 35%, 4.0 = 30% ( $\chi^2 = 23.586$ ,  $p < .000$ )
- 30% of those in Greek life, fraternity or sorority, used significantly more vaping devices than those not in Greek life (18%) ( $\chi^2 = 6.344$ ,  $p = .012$ )

Stages of Change ( $N = 487$ )

- Already quit – 21%
- Quitting in 30 days – 14%
- Have plan to quit in 6 months – 12%
- Think of quitting, no plan – 10%
- Think of cutting back – 12%
- Do not want to stop – 19%
- Not a problem, not quitting – 12%

Themes ( $N = 34$ )

- Safer than Smoking - Perceived as less risky compared to tobacco and other substances
- It's Cool in High School - Exposure introduced in high school and perceived as popular
- Generationally Chill - Vaping is neither condoned nor condemned by peers
- Quitting Because of Consequences - Some vapers realized adverse health effects
- Ease of Accessibility - Possible to obtain regardless of age restrictions or cost

### Thematic Quotes ( $N = 34$ )

**Safer than Smoking**

"I saw it as like a safer alternative to cigarettes or smoking marijuana or alcohol or anything like that cause the effects weren't known."

**It's Cool in High School**

"I still remember in high school when my high school boyfriend bought me my first vape and I felt so cool. When I'd get pissed at my parents I'd go in my room, you know, hit the vape because I was like oh, yeah, I'm the rebellious child, you know."

"So I think in high school it was something that was hyped up and like since I've gotten to college, even my freshman year when the Juul was all the rage, like it still kind of lost its value a little bit cause now it was legal and it wasn't fun anymore."

**Generationally Chill**

"...our generation I think is much more forgiving when it comes to things like marijuana use, vaping, drinking, things like that because we are awesome..."

**Quitting Because of Consequences**

"...I get really bad headaches when I don't do it. I get bad headaches when I do it... Also, it's a mood stabilizer so like if you need it, like it helps stabilize your mood but it can also lead to mood swings... So I can see it definitely affecting your health negatively."

**Ease of Accessibility**

"Yeah, my brother spends \$14.75 every two weeks...and gets it like shipped right to our house so yeah."

"Yeah, for me for like my high school they would just get it from like upperclassmen."

### Conclusions

- Those in Greek life reported higher rates of vaping use
- Students with a lower GPA reported more vaping use than those with a higher GPA
- Half of the participants in the survey have tried a vaping device
- 31% of current vapers do not want to quit or do not see vaping as harmful
- Students were first exposed to vaping typically in high school
- Students used vaping devices due to curiosity and to feel more relaxed
- Students believed that their peers were less judgemental of risk behaviors such as vaping

### Recommendations

- Disseminate university smoking and vaping policies in order to help spread awareness about vaping
- Continue essential research about the long-term effects of vaping
- Encourage nurses to provide health promotion strategies and education regarding vaping
- Advocate for new vaping regulations with state legislators

