

Examining Differences in Reasons Why Former vs. Current Teenage E-Cigarette Users Smoke

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- Electronic cigarette (e-cig) use can lead to nicotine dependency and addiction, reduced lung function, early cardiovascular damage, and affected brain development in teenagers.¹
- As of 2020, 19.6% of US high schoolers and 4.7% of US middle schoolers use e-cigarettes.²
- A better understanding of the factors and reasons that lead teens to use e-cigarettes is needed.³
- Previous studies suggest the influence of family and friends, appealing flavors, and curiosity as the main reasons teens choose to use e-cigarettes.⁴
- This study examines the different reasons teens decide to use electronic cigarettes and aims to identify other possible reasons, to inform prevention and cessation interventions.

Methods

Design

- Cross-sectional analysis of data from the 2020 National Youth Tobacco Survey (NYTS), a public data set by the Centers for Disease Control and Prevention (CDC).

Sample

- We analyzed data for 11,006 teenage responders aged 13-19, in 6-12 grade from all 50 states and the District of Columbia. Of the 11,006 respondents, **3,692 used an e-cigarette at least once in their lifetime.**
- **Current users:** those who reported having ever used e-cigarettes, even once or twice and having used e-cigarettes 1 to 30 days prior to survey completion.
- **Former users:** ever smokers who did not use e-cigarettes 30 days prior to survey completion.

Variables

- **Predictor variables:** age, sex, race, grade level, and e-cigarette use.
- **Outcome variables:** Reasons why respondents used e-cigarettes (1) use by a friend, (2) use by a family member, (3) to quit altogether, (4) because they cost less, (5) because they were easier to get, (6) because they were considered less harmful than other tobacco products, (7) because people online or in the media use them, (8) to do tricks, (9) because they had appealing flavors, (10) having the ability to conceal use at home or at school, and (11) curiosity.

Analysis

- Descriptive statistics to characterize the sample population.
- Chi-square analyses to determine differences between former and current e-cigarette users.

Demographic Characteristics of the Sample

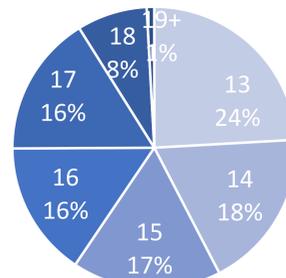


Figure 1. Age

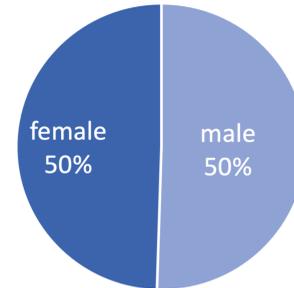


Figure 2. Sex

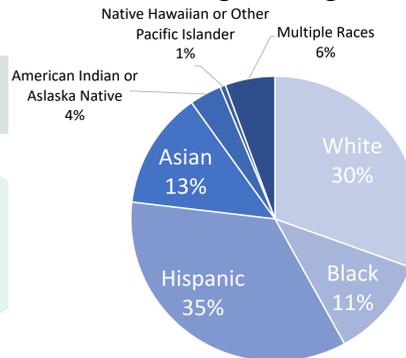


Figure 3. Race

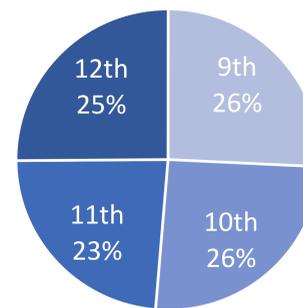


Figure 4. Grade

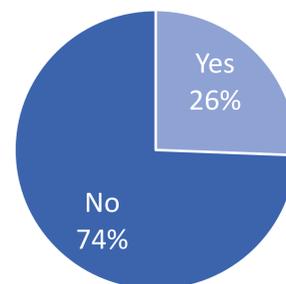


Figure 5. E-Cig Use

- 1,923 former e-cig users
- 1,769 current e-cig users

Conclusions

- This study revealed that friends remained a major reason why current e-cigarette users continue to smoke compared to former e-cigarette users in 2020.
- While previous studies found family and friends, appealing flavors, and curiosity contributed to e-cig use,⁴ COVID-19 may have changed real and perceived risk and accessibility of e-cigs and recent legislation banning flavored e-cigs may have changed the reasons why teenagers used e-cigs.⁵
- Results of this study should inform the development of targeted prevention and cessation interventions to decrease e-cigarette use among teenagers.

Results

Table 1. Chi-square comparing the reasons why current vs. former e-cigarette users smoked.

What were the reasons why you used e-cigarettes?	Current E-Cig Users (n=1,769)	Former E-Cig Users (n=1,923)	p-value
Friends Used			0.01*
Yes	161 (9%)	152 (8%)	
No	1608 (91%)	1,771 (92%)	
Family Member Used			0.90
Yes	49 (3%)	52 (3%)	
No	1,720 (97%)	1871 (97%)	
To Quit Other Tobacco Product Use			0.55
Yes	15 (1%)	20 (1%)	
No	1,752 (99%)	1903 (99%)	
Cost Less than Other Tobacco Products			0.31
Yes	9 (1%)	15 (1%)	
No	1,760 (99%)	1908 (99%)	
Easier to Get than Other Tobacco Products			0.39
Yes	16 (1%)	23 (1%)	
No	1,753 (99%)	1,900 (99%)	
Less Harmful than Other Tobacco Products			0.85
Yes	44 (3%)	46 (2%)	
No	1725 (97%)	1,877 (98%)	
People online or in the media use them			0.54
Yes	13 (1%)	11 (1%)	
No	1756 (99%)	1,912 (99%)	
To do tricks			0.46
Yes	74 (4%)	90 (5%)	
No	1695 (96%)	1,833 (95%)	
Appealing Flavors			0.11
Yes	53 (3%)	76 (4%)	
No	1716 (97%)	1,847 (96%)	
Can hide use at home or at school			0.21
Yes	52 (3%)	44 (2%)	
No	1717 (97%)	1,879 (98%)	
Curiosity			0.23
Yes	224 (13%)	219 (11%)	
No	1545 (87%)	1,704 (89%)	

* p < 0.05 considered significant

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