AMERICAN COLLEGE HEALTH ASSOCIATION

AN ACHA WHITE PAPER

Addressing E-cigarette Use and Vaping on College and University Campuses

JANUARY 2021

Abstract

The Surgeon General declared e-cigarette use among young people a "major public health concern," as is reinforced by the fact that e-cigarettes are the most commonly used tobacco product among young adults transitioning to and on college and university campuses. The rise in use of these products is concerning, particularly given the risk of short- and long-term health effects, nicotine dependence, and an increased risk of using combustible tobacco cigarettes among young adults. Exposure to nicotine through young adulthood can be harmful to brain development, leading to decreased cognitive ability, and increased risk for mental health disorders. College and university campuses provide a unique setting to: 1) ensure the campus community is staying up-to-date on emerging news and research linked to use of e-cigarettes and vaping products; 2) provide access to evidence-based tobacco treatment resources; and 3) promote tobacco-free campus policies that include e-cigarettes. This white paper will succinctly summarize the immediate need for action on college campuses, including what we know, what we need to know more about, and what we can do to end the trend of e-cigarette use in our campus communities.

Introduction

E-cigarettes are currently the most popular tobacco product used by young people. From 2017 to 2019, e-cigarette use among high school students rose by 135 percent.[1] In 2019, over 5 million middle and high school students used e-cigarettes – an alarming increase of nearly 3 million more students in two years.[1] Similarly, data from the most recent Spring 2019 ACHA-National College Health Assessment revealed that e-cigarette use among college students is also on the rise, with 14.3% of undergraduates reporting any use within the last 30 days.[2] As we anticipate rates will continue to increase as young adults transition to our college campuses, it provides a unique opportunity to prevent initiation, provide support for cessation and treatment, and empower this generation of young people to take action to protect the nation's health.

E-cigarettes are known by many different names. They are sometimes called "electronic nicotine delivery systems (ENDS)," "e-cigs," "e-hookahs," "mods," "vape pens," "vapes," "tank systems," and "disposables." Reference to e-cigarettes throughout the paper is inclusive of all brands and types of devices. In addition, young people often refer to using an e-cigarette as "vaping"; terminology should be considered as the e-cigarette landscape is constantly evolving.

Young People and E-cigarettes: Concerns Include Risk for Dependence and Health Consequences

The Surgeon General concluded that youth use of nicotine in any form, including e-cigarettes, is unsafe, causes addiction, and can harm the developing adolescent brain.[3] As of January 7, 2020, there were 60 deaths and 2,558 hospitalized patients with nonfatal cases of e-cigarette, or vaping, product use- associated lung injury (EVALI).[4] While 40% of those with fatal cases and 33% of those with nonfatal cases reported exclusive use of THC-containing products, many of these individuals reported use of either exclusive nicotine-containing products and/or a combination with THC-containing products.[4] Thus, the Centers for Disease Control and Prevention recommends everyone refrain from using all e-cigarettes/vaping products and reaffirms that young people should never use e-cigarettes. The harms that e-cigarettes currently pose to youth and young adults far outweigh any potential benefits being purported.

A growing number of studies have found that young people who use e-cigarettes are more likely to become smokers, and many are low-risk youth who would not have otherwise smoked cigarettes. According to the National Academies of Sciences, Engineering and Medicine,[5] "There is substantial evidence that e-cigarette use increases risk of ever using combustible tobacco cigarettes among youth and young adults." While many youth using e-cigarettes report they did not know the product contained nicotine,[6] pod-based e-cigarettes like JUUL contain higher levels of nicotine than first generation e-cigarettes. A typical cartridge or 'pod' can contain as much nicotine as a pack of regular cigarettes.[7] The nicotine salts used in popular pod-based and disposable devices allow high levels of nicotine to be inhaled more easily and with less irritation, which may make initiation easier. Beyond initiation, continued use and frequency of e-cigarette use is concerning. Youth are using e-cigarettes more frequently than ever before – 1.6 million middle and high school students reported that they used at least 20 days a month.[1] Unfortunately, college students report similar patterns of use and signs of dependence.[8-11] Nicotine exposure among youth who use pod-based e-cigarettes is higher than among those who exclusively smoke combustible cigarettes,[12] reinforcing risk for

dependence and polytobacco use. As young people transition to college campuses, we must be empathetic that many are already dependent on these tobacco products and not only provide opportunities to share relevant facts about the possible consequences, but also put these young people in touch with tobacco treatment resources.

Research continues to emerge on the short- and long-term health effects of e-cigarettes, reinforcing they are not free of toxins and still deliver harmful chemicals.[3,13,14] Beyond the E-cigarette and Vaping Associated Lung Injury (EVALI) outbreak mentioned above,[4] current and past e-cigarette users have increased risk of bronchitic symptoms[15] and there remains concern that the chemical flavorings found in many of the e-liquids used could cause respiratory damage when the aerosol is inhaled.[16] The Surgeon General reinforces that, "E-cigarette aerosol is not harmless. It can contain harmful and potentially harmful constituents, including nicotine."[3] There is also concern with regards to bystanders and secondhand aerosol, including exacerbation of asthma attacks among youth with asthma.[17]

Equally as concerning, e-cigarettes may contain numerous chemicals previously linked to increased risk for cavities, seizures, heart disease, and cancer. These short- and possible long-term health consequences sound eerily similar to warnings included in the Surgeon General's Report over 50 years ago when talking about combustible cigarettes.[18] These newer products are setting up future generations for a lifetime of dependence and health risks if we do not intervene now.

Tobacco Use and COVID-19

In 2019, the beginnings of a virus with unknown origin (now known as SARS-COV-2 or coronavirus, and which causes the disease COVID-19) began circulating throughout China, making its way to different countries as people traveled.[19] Within six months, the virus spread throughout countries around the world. The novel coronavirus outbreak became the focus of the United States in March 2020, with all non-essential businesses closing shortly thereafter. Stay-at-home orders, social and physical distance requirements, as well as avoidance of large gathering orders went into place across all 50 states,[19] colleges and universities were greatly impacted, most of them turning to virtual and online learning.

The more scientists and epidemiologists examine the impact of COVID-19, a body of evidence has grown showing impact on the elderly and those with underlying medical conditions, including those with chronic lung disease. While many have recovered from the illness, unfortunately many have not, and many more are still susceptible. Because the coronavirus attacks the lungs, it could be an especially serious threat to those who smoke tobacco or marijuana or who vape. Nora Volkow, MD, the director of the U.S. National Institute on Drug Abuse stated, "It is therefore reasonable to be concerned that compromised lung function or lung disease related to smoking history, such as chronic obstructive pulmonary disease (COPD), could put people at risk for serious complications of COVID-19."[20] As campuses monitor COVID-19, it would be remiss not to consider susceptibility and symptoms which may be exacerbated by tobacco use, including e-cigarettes.

An Epidemic Perpetuated by Targeted Marketing and Appeal to Youth

The current e-cigarette epidemic is not only due to the sleek design and higher nicotine concentration of pod-based devices (e.g., JUUL),[8,21-23] but it has also been fueled by the targeted and appealing marketing used by companies to reach young people.[21] In 2019, nearly 70% of youth reported exposure to e-cigarette marketing.[24] In 2015, JUUL spent more than $1 million to market the product through social media, using colorful, eye-catching designs and youth-oriented imagery and themes, as well as young brand ambassadors to promote the product.[25] Total e-cigarette advertising expenditures in print, radio, television, Internet and outdoors were $110 million in 2018, which includes $73 million spent by JUUL alone.[26] The sharp uptake in e-cigarette use among young people during this time[1] is no coincidence.

Moreover, we know that more than 8 out of 10 youth initiate tobacco use with a flavored product.[27,28] Youth e-cigarette users cite flavors as a main reason they begin using e-cigarettes. E-cigarette companies have capitalized on that fact and design fun flavors like strawberry, mango, cotton candy, gummi bears, and crème brule to attract youth. Although Congress voted on a bill (H.R. 2339, the Protecting American Lungs and Reversing the Youth Tobacco Epidemic Act) to prohibit all flavored tobacco products, including flavored e-cigarettes, menthol cigarettes, and flavored cigars in Spring 2020, there were several loopholes of products left on the market and not included in the legislation. While a strong flavor policy is intended to curb e-cigarette use and initiation among youth and young adults as well as protect vulnerable groups known to have high prevalence use rates with flavored products, many products that are both appealing and widely accessible to youth and young adults were left on the market, including:[23,29]

- Disposable flavored e-cigarettes
- Over 15,000 flavored e-liquids
- Open systems for refillable pods like Sourin, Smok, and JUUL-compatible pods
- Menthol-flavored pods

Risk of Polysubstance Use

Currently, tobacco is the primary drug used in vaping devices. However**,** e-cigarettes also deliver cannabis as well as other drugs. In 2016, one-third of U.S. middle school and high school students who ever used e-cigarettes had used cannabis products in e-cigarettes.[30] Because e-cigarettes are marketed as a safer alternative to cigarettes, youth may underestimate the harm associated with other drug use when delivered by e-cigarettes. An analysis of the e-cigarette polysubstance use data from the 2017 Youth Behavioral Risk Factor Surveillance System revealed that among adolescents (9th – 12th grade), 12% reported using e-cigarettes in the past 30 days.[31] The analysis also identified that a majority of e-cigarette users (93%) reported using other substances, such as alcohol, cannabis, prescription drugs, and illicit drugs.[31] A link between e-cigarette use with other substances beyond cannabis suggests a new category of substance use is emerging. E-cigarette users are more likely than non-e-cigarette users to engage in polysubstance use.[32,33] Polysubstance use is the combined use of two or more substances in a given time[34-36] and has gained increasing relevance as a result of the opioid epidemic.[35] While the research is limited to date, these findings are consistent with previous studies that indicate e-cigarette users misuse other substances.[32,34,37] Miech and colleagues[33] note that e-cigarettes serve in a complementary capacity to typical drug use stating that "older adolescents do not use e-cigarettes alone to the exclusion of other substances."

The relative ease of e-cigarettes use may facilitate polysubstance use.[38] Illicit drugs delivered by an e-cigarette system include but are not limited to methamphetamines, crack cocaine, prescription and illegal opioids.[39] Addressing the risks of illicit substance use with e-cigarette devices is important because of the potency of available opioids and stimulant drugs. The ease to which e-cigarettes conceal the use of other illicit substances and circumvent smoke- and tobacco-free policies is alarming to policymakers.[40] While the focus of concern related to e-cigarettes has been on respiratory distress and disease, emergent data indicate that e-cigarette use is associated with risky substance use. Access to highly addictive drugs using electronic vaporization systems creates challenges for college health administrators, public health professionals, and law enforcement officials. Policymakers and clinicians are advised to be aware of the risk e-cigarettes pose for the initiation of other substances. While it is uncommon at this time, the risk of vaporizing illicit drugs may increase the prevalence of substance use disorders. Public health advocates must remain vigilant to the risk polysubstance use poses for youth and young adults.

The Importance of Tobacco Treatment

Quitting use of tobacco products at any age is beneficial. Smokers who quit by the time they are 35 to 44 years of age avoid most of the risk of dying from a smoking-related disease.[41] Unfortunately, two-thirds to three-quarters of smokers who try to quit do not use any evidence-based cessation counseling or medications. Tobacco users of all ages improve their odds of successfully quitting when they use evidence-based treatments as described below. This was reiterated in a newly released report from the United States Surgeon General's (USSG) office. It is the 34th report on tobacco from the USSG office but the first one focusing on cessation.[42]

Key Findings from Surgeon General's Report on Tobacco Cessation

- Tobacco cessation is beneficial at any age. Tobacco cessation improves health status and enhances quality of life.
- Tobacco cessation reduces risk for many adverse health effects, including reproductive health outcomes, cardiovascular diseases, chronic obstructive pulmonary disease (COPD), and cancer.
- More than three out of five U.S. adults who have ever smoked cigarettes have quit. Although a majority of cigarette smokers make a quit attempt each year, less than one-third use cessation medications approved by the U.S. Food and Drug Administration (FDA) or behavioral counseling to support quit attempts.
- Tobacco cessation medications approved by the U.S. Food and Drug Administration (FDA) and behavioral counseling are cost-effective cessation strategies. When combined, medication and counseling will increase the likelihood of successfully quitting smoking.
- E-cigarettes, a continually changing and heterogeneous group of products, are used in a variety of ways. Consequently, it is difficult to make generalizations about efficacy for cessation based on clinical trials involving a particular e-cigarette, and there is presently inadequate evidence to conclude that e-cigarettes, in general, increase tobacco cessation.

Given the number of young people now dependent on e-cigarettes, there is a critical need for evidence-based support. While research is sparse in the area of cessation specific to young people and e-cigarettes, promising strategies have emerged and are being tested. One effective program recently developed by Truth Initiative® in collaboration with Mayo Clinic, is a tailored text message-based e-cigarette quit program. This program could aid young people in their desire to stop vaping. Early results show promising evidence.[43] Within the first five weeks of the This is Quitting text-message program launch, 13,421 teens and 13,750 young adults enrolled. The majority of teens (69%) and young adults (74%) set a quit date, which for close to half (44.7%) of enrollees was the day they enrolled. After just two weeks, more than half (60.8%) reported that they had reduced or stopped using e-cigarettes. At three months, 15.5% of respondents stated that they had quit vaping for 30-days or longer. The number of youth and young people enrolling and the high levels of engagement reinforce that young people are interested in quitting and gravitate toward accessible and digital platforms. These findings should be considered as campuses strive to reach incoming and current students.

Time for Campuses to Take Action

The e-cigarette epidemic facing our young people is a public health crisis that demands action across various levels. As recommended by the Centers for Disease Control and Prevention and the Surgeon General, we all play a role in educating, tailoring prevention and treatment programs, and advocating for effective tobacco policies. College and university campuses are poised to reach our campus communities in a variety of ways.

Implement Evidence-based Prevention and Education

- Develop, implement, and evaluate prevention programs that are free from tobacco industry influence.
- Prevention efforts should aim to reduce the appeal of and experimentation with e-cigarettes.[44]
- Prevention efforts should also consider risk of polysubstance use.
- Capitalize on the use of social media to reach college students.
- Peer-to-peer strategies are effective for tobacco prevention and substance use.[45]

Promote Awareness with Student Health Providers and Student Affairs Personnel

- Ensure student health providers are asking about e-cigarettes and vaping (all substances) when screening patients for the use of any tobacco products. Language is important given the ever-changing landscape of these products.
- Educate all campus personnel about the risks of all forms of tobacco product use, including e-cigarettes, for young people. Continuing education opportunities may be beneficial.
- Refer anyone who indicates they use tobacco to tobacco treatment resources.

Make Tobacco Treatment Accessible and Relevant

- Encourage everyone to quit all forms of tobacco, including e-cigarettes.[42]
- Ensure the institution's benefit/health insurance plan includes coverage for tobacco cessation treatment that is comprehensive, barrier-free, and widely promoted. These considerations increase the use of treatment services, lead to higher rates of successful quitting, and are cost-effective.
- Use appropriate communication strategies to reach different populations. Engage stakeholders throughout campus sharing messages frequently to faculty, staff, students, and visitors.
- Offer a variety of tobacco treatment options for students and employees. Offerings can include evidence-based treatment strategies:[46]
    - In-person counseling by a Tobacco Treatment Specialist
    - Group counseling facilitated by a Tobacco Treatment Specialist
    - Counseling via phone, web, or text based
    - Pharmacotherapy
- Consider the disparities in usage of e-cigarettes among diverse populations, including but not limited to students in recovery from a substance use disorder, LGBTQIA+ students, students of color, and low-income students.

Promote Tobacco-free Campus Policies that Include E-cigarettes

- Develop, adopt, implement, and enforce tobacco-free campus policies that are free from tobacco industry influence and that address all types of tobacco products, including e-cigarettes.[47]
- Use model policy language that clarifies the inclusion of e-cigarettes and other vaping devices.[48]
- Ensure policy language is communicated in a way that resonates with all populations on campus.[49]
- Develop comprehensive compliance strategies, which are critical to the success of campus policies.[50,51]
- Include enforcement procedures in the policy that are equitable to other offenses and corrective action for faculty, staff, students and visitors.

Conclusion

We do not want to see another 5 million young people become dependent on e-cigarettes or other tobacco products, especially as they transition to college and university campuses. While the tobacco and e-cigarette industry has grown bolder in their efforts to keep people addicted and target products and promotions to youth and at-risk population, we are primed to take action. As leaders at our colleges and universities, we have an opportunity to protect and support our students through building awareness across the campus community, providing tobacco treatment resources to help those who are already dependent, and advocating for stronger regulation and comprehensive tobacco-free campus policies.

Additional Resources

ACHA Position Statement on Tobacco Policies: Use to support rationale for comprehensive tobacco-free campus policies.

American Nonsmokers' Rights Foundation: Listing of current smoke- and tobacco-free campus policies as well as model policy language.

Best Practices for Comprehensive Tobacco Control Programs: Evidence-based guide to help build and maintain effective tobacco control programs to prevent and reduce tobacco use.

Centers for Disease Control and Prevention Smoking & Tobacco Use: Fast facts, state-specific data, links to evidence-based community resources and media messaging.

Eliminate Tobacco Use: Resources to help campuses further their tobacco-free efforts.

Smokefree.gov: Tools and resources to help people quit.

Truth Initiative: Resources to achieve a culture where all youth and young adults reject tobacco, including quit resources and media campaigns.

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