



Teens' perspectives on E-cigarettes vs. traditional cigarettes

Manya Sikka

E-cigarette use among teenagers has increased by 47% in the past five years [1]. E-cigarettes, commonly known as vapes, are battery-powered devices that heat a liquid into an aerosol, which the user inhales. While these devices were first introduced in the 2000s, their popularity surged with the release of the Juul brand in 2015. This started the trend of youth-targeted marketing and high nicotine delivery. Although e-cigarettes are often perceived as having fewer negative health impacts than traditional cigarettes, they are far from harmless. E-cigarettes pose significant risks, particularly for teenagers because of the negative health effects of nicotine on developing teen's brains and bodies. Additionally, the long-term health effects of e-cigarettes remain uncertain. The potentially life-threatening dangers of vaping were brought center-stage during the 2019 outbreak of E-cigarette/vaping product use-associated lung injury (EVALI), where the CDC reported over 2,800 hospitalizations concerning the risks associated with vaping [2]. The media coverage of this outbreak sparked some attention to the negative effects of vaping, prompting regulation from officials.

More research is needed to fully understand the cause of increased e-cigarette use among youth given the potentially negative health effects in developing teens. Some possible reasons may include that e-cigarettes are marketed as "safer" than traditional cigarettes, and that there is easier access for teens. In this review, we aim to summarize the current literature investigating teen's perspectives of and risk factors for e-cigarette use, and identify gaps that offer opportunity for future research. In doing this, we hope to develop approaches to reduce e-cigarette use in youth.

Colors/Flavors

One prominent factor that impacts how e-cigarettes are perceived by youth is the implementation of various colors and flavors in the design of the e-cigarette. One large study involving 1,500 participants, aged 13-17 years old, investigated the perceived risks of e-cigarettes by having participants complete an online survey found that the association of e-cigarettes with flavors, food, or peoples' faces lowered the overall perceived risk of the e-cigarette [3]. Oftentimes, the positive themes of these flavors and foods reduce the risk perception. In contrast, anything that drew a comparison between e-cigarettes with traditional cigarettes, such as presenting negative health effects or warning symbols, increased the perceived risk of e-cigarettes. Another study investigated this further by presenting high schoolers with three products, two of which contained warning labels and one which had a flavor label. In this study, the warning symbols (i.e., FDA and Market labels) increased risk perception as measured by the The Influence of Modified Risk Statements [4]. Overall, research suggests using flavoring and foods in advertisements and packaging accompanied with a lack of risk statements can skew the way that young adults perceive the effects of e-cigarettes.

Easy Access

Another factor in the increased youth e-cigarette use is the easy access to the products. In a study conducted across 30 U.S. cities on youth between the ages of 13 and 20, researchers found that youth may have increased access to e-cigarettes via online websites that lacked strict



age verifications, delivery services (e.g., DoorDash), or shipping products to an older friend's house [5]. Furthermore, youth have various ways to obtain e-cigarettes in school and social settings. A survey study of 267 students in Texas aged 12-20 found that 70% of participants stated that e-cigarettes were easy to obtain [6]. Surrounded by other students who use them, many students end up desiring e-cigarettes due to peer pressure, and obtaining these e-cigarettes is not a challenge.

Safer Alternative

An additional factor in the rise of youth e-cigarettes is the belief that it is a safer alternative to traditional cigarettes. In a study conducted with 1,500 students, they found that current youth vape users reported greater perceived benefits, lower risk perceptions, and greater positive expectations of e-cigarette use compared to traditional cigarettes overall [7]. They additionally found that 66% of youth who prefer vaping over smoking marijuana believed that vaping was healthier, supporting the fact that youth have misconceived perceptions. In fact, a study done on 3,170 students from 4 Connecticut high schools revealed that students weren't aware of the high nicotine percentage in JUUL pods, with most students indicating that JUULs contained low nicotine [8]. Youth, ignorant of the health risks, tend to believe that vapes are safer.

Another study took this further where they did a study on a group of 443 youth non-smokers, where they found that the participants reacted differently to different forms of the e-cigarette [9]. Vapes in the form of cigarettes, sometimes referred to as cigalikes, were perceived as higher-risk compared to traditional forms of e-cigarettes. Conversely, vapes in the form of traditional e-cigarettes, which do not closely resemble cigarettes, were perceived as less harmful. Although e-cigarettes may be less harmful overall compared to traditional cigarettes, it is possible that youth assume that e-cigarettes are safe. The lack of education surrounding e-cigarettes and vapes can lead teenagers to harbor false beliefs, which may ultimately lead to adverse health outcomes. The data suggests that more education is needed to accurately characterize the health risks of e-cigarettes to our youth.

Other's Perceptions

Another factor that impacts teenager's likelihood of using e-cigarettes is how the people around them perceive e-cigarettes. It's known that teenagers are highly influenced by the thoughts and behaviors of friends around them. One study showed that teenagers are also highly influenced by peers' opinions when it comes to e-cigarette usage [6]. Conducted in south-central Texas schools, researchers found that most teenagers felt that their parents would strongly disapprove of their vaping, but were less certain that their friends would disapprove. This suggests that as e-cigarette usage becomes more popular among youth, it may become more socially acceptable, and less stigmatized, to vape. A combination of peer pressure and normalization may cause more teenagers to become active e-cigarette users.

Audience

Another factor that contributes to the accessibility and appeal of e-cigarettes is the marketing techniques companies use to spark interest in youth. Researchers in Scotland performed observational audits of retail stores and found that 36% of stores had e-cigarettes placed near products popular to children, including confectionery, collectible cards, mints and gum [10]. This increased exposure may contribute to the normalization of e-cigarettes in the eyes of children. In

fact, other research has shown that 78% of middle and high school students reported having been exposed to at least one advertisement for e-cigarettes [11]. Overall, the increased exposure and normalization of e-cigarettes to children and teenagers may decrease the risk perception of these products and lead to increased risk for e-cigarette use.

Mental Health

Another prominent factor in e-cigarette use is mental health issues in adolescents. A recent study surveyed more than 3,500 university students on their usage of e-cigarettes, drugs/alcohol, and mental health issues [12]. Researchers found a strong correlation with recent use of e-cigarettes and lower self-esteem, alongside greater symptoms of anxiety, PTSD, ADHD, and impulsivity. A 2023 umbrella review, involving 6 systematic reviews with 85 total primary clinical studies, also found that increased depression, anxiety, and impulsivity were significantly associated with e-cigarette usage [13]. Though these studies do not establish causality, these associations suggest a strong link between e-cigarettes and adverse mental health states in youth. Moreover, studies have shown that nicotine can worsen the effects of depression and anxiety in youth.

More research needs to be done to characterize the risk of youth turning to e-cigarettes as a coping mechanism in the setting of mental health struggles. In fact, a recent focus group study found various ways to help combat the rise of e-cigarettes based on student input. Researchers interviewed 8th, 10th, and 12th graders on their opinions of why youth turn to e-cigarettes and how to combat this [13]. Students answered that stress and mental health can have an impact, stating that a decreased emphasis on grades and class rank and addressing mental health stigma would all help youth find other resources to cope besides e-cigarettes. More high-quality studies with large student populations are needed to better characterize the dynamic between e-cigarette usage and mental health.

Information/(Solutions to our problem)

We have covered many factors that may lead to the increased risk of using e-cigarettes among teens. There are several possible solutions to combat these factors and help teens make better choices. One major way to protect teens from using e-cigarettes is by providing them with more education on its adverse effects. For instance, in one study, students voiced their belief that additional education and information on e-cigarettes would prevent many students from using these substances, as they may not be aware of the effects these substances have [13]. A 2024 systematic review and meta-analysis involving 12 studies found that currently, many different cessation programs could help in preventing vaping [14]. However, the variability in these programs causes there to not be a set program which would definitely help.

Conclusion

In this review, we summarized the current literature on teens' perspectives regarding e-cigarette use and identified key risk factors contributing to its rise. We also highlighted several evidence-based interventions that may help reduce the risk of e-cigarette use among teens. As e-cigarette use has skyrocketed in recent years, we must urgently work to help teens make healthy, educated choices. Adolescents are exposed to a range of influences, including marketing campaigns by e-cigarette companies, peer pressure, and misinformation regarding the safety of these devices. These factors have contributed to the rapid adoption of e-cigarettes

among teens. However, the success of evidence-based methods addressing tobacco smoking, alcohol, and drug use provides a blueprint for tackling this challenge. By gaining a better understanding of the risks and educating teens with proper information to make healthier decisions, we can mitigate the growing public health concern of e-cigarette use among youth.

Bibliography

1. CDC Foundation. *Monitoring E-Cigarette Trends in the United States: Urgent Action Needed to Protect Kids from Flavored E-Cigarettes*. CDC Foundation, 21 Nov. 2024. Available from: <https://www.cdcfoundation.org/pr/2024/Monitoring-E-Cigarette-Trends-in-the-United-States-Report> (accessed on 2025-07-08).
2. CDC. *Severe Lung Disease Linked to E-Cigarette Use—Basic Information*. CDC (archived). Available from: https://archive.cdc.gov/www_cdc_gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html (accessed on 2025-07-08).
3. Boynton MH, Sanzo N, Brothers W, Kresovich A, Sutfin EL, Sheeran P, Noar SM. Perceived effectiveness of objective elements of vaping prevention messages among adolescents. *Tob Control*. 2023 Aug; 32 (e2): e228-e235. doi: 10.1136/tobaccocontrol-2021-057151.
4. Katz SJ, Shi W, Erkkinen M, Lindgren B, Hatsukami D. High School Youth and E-cigarettes: The Influence of Modified Risk Statements and Flavors on E-cigarette Packaging. *Am J Health Behav*. 2020; 44 (2): 130-145. doi:10.5993/AJHB.44.2.2
5. Vogel EA, Henriksen L, Schleicher NC, Prochaska JJ. Young people's e-cigarette risk perceptions, policy attitudes, and past-month nicotine vaping in 30 U.S. cities. *Drug Alcohol Depend*. 2021; 229(Pt A): 109122. doi:10.1016/j.drugalcdep.2021.109122
6. Gilmore BA, Gilmore CM, Reveles KR, et al. A Survey of Vaping Use, Perceptions, and Access in Adolescents from South-Central Texas Schools. *Int J Environ Res Public Health*. 2023; 20 (18): 6766. Published 2023 Sep 15. doi:10.3390/ijerph20186766
7. Moustafa AF, Rodriguez D, Mazur A, Audrain-McGovern J. Adolescent perceptions of E-cigarette use and vaping behavior before and after the EVALI outbreak. *Prev Med*. 2021; 145: 106419. doi:10.1016/j.ypmed.2021.106419
8. Morean ME, Bold KW, Kong G, et al. Adolescents' awareness of the nicotine strength and e-cigarette status of JUUL e-cigarettes. *Drug Alcohol Depend*. 2019; 204: 107512. doi:10.1016/j.drugalcdep.2019.05.032
9. Berry C, Burton S. An Examination of Perceptions of Similarity to Cigarettes, Health Risk Perceptions, and Willingness to Try Across Nicotine Vaping Products. *Nicotine Tob Res*. 2022; 24 (7): 1120-1124. doi:10.1093/ntr/ntac047
10. Perikleous EP, Steiropoulos P, Paraskakis E, Constantinidis TC, Nena E. E-Cigarette Use Among Adolescents: An Overview of the Literature and Future Perspectives. *Front Public Health*. 2018; 6: 86. Published 2018 Mar 26. doi:10.3389/fpubh.2018.00086
11. Jones K, Salzman GA. The Vaping Epidemic in Adolescents. *Mo Med*. 2020; 117 (1): 56-58.



-
12. Grant JE, Lust K, Fridberg DJ, King AC, Chamberlain SR. E-cigarette use (vaping) is associated with illicit drug use, mental health problems, and impulsivity in university students. *Ann Clin Psychiatry*. 2019; 31 (1): 27-35.
 13. Khan AM, Ahmed S, Sarfraz Z, Farahmand P. Vaping and Mental Health Conditions in Children: An Umbrella Review. *Subst Abuse*. 2023; 17: 11782218231167322. Published 2023 Apr 20. doi:10.1177/11782218231167322
 14. McMahon B, Rudella JL, McMahon M, Wendling K, Paredes A, Register M. Community-Based Participatory Research: Engaging Youth to Provide Perspective on Risk and Protective Factors. *J Sch Health*. 2020; 90 (9): 673-682. doi:10.1111/josh.12928.