

Teens' Perspectives on E-cigarettes vs. Traditional Cigarettes

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ABSTRACT

Though e-cigarettes are marketed substantially differently than traditional cigarettes, many of their potential health risks remain similar. While current social media poses e-cigarettes as a healthy alternative to traditional cigarettes, research shows that e-cigarettes still carry significant health risks similar to traditional cigarettes, though sometimes at reduced levels. Many e-cigarette companies have marketed their products towards adolescents, and there have been rising rates of teens using e-cigarettes. In this literature review, the current knowledge surrounding teen perspectives of e-cigarette use compared to traditional cigarettes is summarized, along with the different factors that contribute to this line of thinking. The findings indicate students seek additional education involving e-cigarettes and their detrimental effects on general well-being and mental health to abrogate these misconceived perceptions.

Keywords: Vaping; Youth; Teen; Perspective; E-cigarette; Smoking

INTRODUCTION

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 risk for teenagers,

as nicotine severely harms the developing brain. Additionally, the long-term health effects of e-cigarettes remain uncertain. The potentially life-threatening dangers of vaping were highlighted 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 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. This review aims 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.

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In doing this, the goal is to develop approaches to reduce e-cigarette use in youth.

MARKETING TACTICS

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 images of people's faces lowered the overall perceived risk of the e-cigarette (3). Often, 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.

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.

YOUTH ACCESS TO E-CIGARETTES

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 easily attainable.

PERCEPTION OF E-CIGARETTES AS SAFER ALTERNATIVES

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 expanded upon this 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 youth.

INFLUENCE OF 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 well-established 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.

CORRELATIONS BETWEEN MENTAL HEALTH AND E-CIGARETTE USE

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.

POTENTIAL SOLUTIONS AND INTERVENTIONS

This paper has 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). Well-designed school interventions may also be effective in deterring youth from vaping. The Click City: Tobacco curriculum is a vaping intervention that was administered to over 1300 students, monitoring their willingness and likelihood to use e-cigarettes before and after learning the curriculum (14). The results showed that students were significantly less likely to use e-cigarettes after the program, which indicates that similar educational programs can be used in e-cigarette interventions.

CONCLUSION

This review summarized the current literature on teens' perspectives regarding e-cigarette use and identified key risk factors contributing to its rise (Table 1). It 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, urgent work is needed 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, the growing public health concern of e-cigarette use among youth can be mitigated.

Table 1. Summary of the key studies on teen perspective on e-cigarettes

Reference #	Study Design	Key Focus	Sample Size	Findings
3	Online survey	Identify how objective elements in advertising vaping prevention messages could affect youth	1501	Ads with flavor and color themes were associated with higher vaping appeal
4	Experimental study	Determine how perception of e-cigarettes is influenced by elements	715	Ads which had modified risk statements raised risk perception
5	Cross-sectional survey	Examine young people's e-cigarette perceptions, use, and attitudes	900	Youth in cities with lax e-cigarette laws have easy access to e-cigarettes
6	Electronic survey	Assess the use of vapes, risk perceptions, and access in South Central Texas high schools	267	Adolescents are highly influenced by their peers when trying e-cigarettes.
7	Longitudinal survey	Determine the difference in adolescent perception of e-cigarettes before and after the EVALI outbreak	1539	Current youth e-cigarette users have stronger positive opinions compared to traditional cigarettes
8	School-based survey	Examine if youth were aware of the high nicotine content in JUUL pods	3170	Youth are not aware of the high nicotine concentration that JUUL pods contain
9	Experimental study	Identify how e-cigarette form affects risk perceptions	443	E-cigarettes that were in the form of a traditional cigarette were seen as higher risk
10	Literature Review	To discuss the characteristics of vulnerable, likely e-cigarette users. Examine the marketing tactics used.	25 articles	36% of stores in Scotland placed e-cigarettes near children's sections
11	Survey	Discusses how e-cigarette companies intentionally target youth through their ads	Middle & High School students (number not stated)	78% of middle school and high school students reported exposure to e-cigarette ads
12	Anonymous online survey	Prevalence of e-cigarette use amount university students and the correlation with mental health	3572	There is a strong connection between e-cigarette use and mental disorders (anxiety, depression, PTSD, etc)
13	Focus groups	Explored student's beliefs regarding drugs, mental health, and school	102	Students voiced their desire for more information on the harmful effects that these substances may carry
14	Random effectiveness trial	Evaluated the effectiveness of the Click City: Tobacco program	5527	The program significantly decreased student likelihood to use e-cigarettes and traditional cigarettes

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CONFLICTS OF INTEREST

The author(s) declare that there are no conflicts of interest regarding the publication of this article.

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