

The Effects of Vaping on High School Student Athletes and Young Adults

HHS 490: Senior Honors Project Paper

Introduction

Using tobacco is a leading primary cause of preventable disease in the United States. The Centers for Disease Control and Prevention (CDC) reported that e-cigarettes represented 11.7% of tobacco use among high school students in 2017. (Centers for Disease Control and Prevention, 2019). This is considered a health issue because there are addictive chemicals, such as nicotine, and harmful health effects that will prevail in the future if we do not prevent and help young adults to quit vaping. The CDC explains that using tobacco is a primary cause of preventable disease in the United States. Athletes in particular, may be affected by performance inhibiting asthma, lung damage, permanent heart tissue impairment specifically relevant to athletes, and compromise to their general health. Vaping is not only an issue in the athletic community but a worldwide concern that deserves attention.

Through research and findings, I had the opportunity to get a better understanding of the literature from different scholarly articles pertaining to the effects of vaping on high school students, athletes, and young adults. During my research, I decided to focus on the background of e-cigarettes, the purpose for why high school students are using e-cigarettes, the underlying effects of vaping, negative effects on the health/ behavior of an individual, and the comprehension of different tools/ strategies that we can help to suppress this issue.

Background

An electronic cigarette “e-cigarette” is defined as a battery-operated device that individuals use to ingest an aerosol that often contains nicotine, flavorings, and other substances. They can be used to represent tobacco cigarettes, cigars, pipes, or even commonplace goods like a pen or a USB memory stick. “The use of any tobacco product by youths is unsafe, including electronic

cigarettes (e-cigarettes). Most e-cigarettes contain nicotine, which is highly addictive, can harm the developing adolescent brain, and can increase risk for future addiction to other drugs.

E-cigarette use has increased considerably among U.S. youths since 2011.” (Centers for Disease Control and Prevention, 2020) E-cigarettes are extremely hazardous for any individual to indulge in, even adults. Little do those individuals who decide to use them know, there are a multitude of ways in which an individual can be impacted by this substance. E-cigarettes were created to help suppress the use of regular tobacco cigarettes intended for adults; however, young adults like high school students and middle school students indulge in the substance which gives them an idea that e-cigarettes are approved for them to use. Essentially, e-cigarettes are a substitute for regular cigarettes. Although it is illegal for young adults to purchase and use e-cigarettes, they find ways to purchase these substances whether it is someone purchasing for them, possibly using a fake ID to purchase, or other ways in which they might be able to retrieve this substance. Overall, e-cigarettes are used everyday by adolescents and e-cigarettes contain nicotine; alongside, long term effects that are detrimental for any individual.

Purpose/ Reasons For Use

High school students, athletes, and young adults use e-cigarettes for a multitude of different reasons and each have their purpose behind using the substance. Using data from the 2016 National Youth Tobacco Survey, the Centers for Disease Control and Prevention and the Food and Drug Administration reviewed self-reported reasons for using e-cigarettes among middle and high school students. According to the research, the most prevalent reasons for students using e-cigarettes in 2016 includes a friend or family member using them, the variety of flavors, and

the notion that e-cigarettes are less dangerous than regular tobacco products like actual cigarettes. (Truth Initiative, 2018)

On the other hand, from previous experience in high school, some of the reasons that I noticed include relieving stress before a big game, a substitute for the tobacco cigarette as stated above, or maybe even to form a social image. In the article *Vaping Epidemic: How Park and Recreation Agencies Are Helping To Fight E-cigarette Use Among America's Teens*, it states, "Vaping is considered cool in my group of friends," says one female teen, who was just 13 years old the first time she began vaping. "It might just be the fact that you're doing the things you know you shouldn't be doing." (Paynich, V. (2019) In this example in particular, I noticed that this individual decided to indulge in vaping due to the fact that she wanted to fit in with her friends and desired a social image so to speak. Deciding to involve yourself in something that can have an impact on your health can be very tempting and appealing; however, some adolescents fail to comprehend those factors and tend to focus on pleasing themselves/ society.

Effects On Health & Behavior

There lies a multitude of negative effects and risks that can lead to negative outcomes when smoking e-cigarettes. According to WebMD, research shows some of the potential risks and side effects that can affect your body such as the brain, lungs, heart, an athlete/ student's behavior, their immune system; as well as, poisoning. According to the effects that take place in the brain, nicotine is known to cause long-term chemical modifications and alterations in the brain by releasing feel-good chemicals. Light-headedness, dizziness, and tremors are some of the other adverse effects. (Ratini, DO, MS, M., 2021) In the journal article, *E-cigarette Use Perceptions That Differentiate E-Cigarette Susceptibility and Use Among High School Students*, "E-cigarette

use among youth is a concern due to the potential toxic nature of some of the e-liquid chemicals and the potential exposure to nicotine which may increase risk for future cigarette use. The adolescent brain is highly vulnerable to the effects of nicotine, which can increase the likelihood of addiction and impairment of higher cognitive processes. It is therefore important to understand factors that influence e-cigarette use to aid prevention efforts for this young population.”

(Burnley, A., Bold, K. W., Kong, G., Wu, R., & Krishnan-Sarin, S. (2021)) In the lungs, nicotine usage leads to quick shallow breathing, long-term lung damage, and an increased risk of lung illness and cancer. (Ratini, DO, MS, M., 2021) Our heart is affected by this substance due to the fact that our heart rate and blood pressure rise, making it more difficult for our hearts to deliver blood and oxygen to our cells. This can increase the risk of heart attack and/ or stroke in the future. (Ratini, DO, MS, M., 2021) In response to our behavior and the way in which we conduct ourselves when this substance is traveling throughout our bodies, nicotine can contribute to the use of tobacco or marijuana. Nicotine is also known to impair impulse control, creating long-term concentration and cognitive issues; as well as, contribute to mood disorders. (Ratini, DO, MS, M., 2021) Our immune system is affected because vaping has been shown to decrease hundreds of essential immunity genes, causing your immune system to be harmed much more than smoking. (Ratini, DO, MS, M., 2021) Lastly, children have the possibility of being poisoned from vapes. In 2014, a child died of e-cigarette toxicity after ingesting liquid nicotine. Between 2013 and 2015, the number of children under the age of six who were poisoned by nicotine in e-cigarettes increased by 1,500%. (Ratini, DO, MS, M., 2021) COVID-19 is known to also have a vital role in the effects of vaping as well. “Among young people who were tested for the virus that causes COVID-19, the research found that those who vaped were five to seven times more likely to be infected than those who did not use e-cigarettes. Teens and young adults need to

know that if you use e-cigarettes, you are likely at immediate risk of COVID-19 because you are damaging your lungs,” said the study’s senior author, Bonnie Halpern-Felsher, PhD, professor of pediatrics.” (Digitale, 2020)

E- cigarettes tend to alter the behavior of an athlete in various ways. These behaviors can include one or multiple different factors when using any form of an e-cigarette. In another example, Cade Beauparlant, the captain of the hockey team, was dismissed after being spotted vaping at school. Kristin Beauparlant, his mother, said that he was treated for nicotine addiction. Her son discovered he had lung problems throughout the treatment. He started vaping when he was in seventh grade. When Beauparlant's child was a freshman on the hockey team, he was forced to sit because he couldn't breathe. She claimed he had mood swings off the rink as well. “He was a child that would scream and yell and swear, call me names. Then he’d just leave,” Beauparlant said. “I’d be like, Where is he going? ” And then I realized he was going to do his JUUL.” One of the reasons that e-cigarettes are becoming more of a concern is that not all students who use them are aware that they contain nicotine. (Krell, 2019) In brief, this example demonstrates the behavior e-cigarettes had on this individual athlete. The way his emotions took over when he presented himself in front of his mother and the lung impairment he developed because of using them truly gives us the understanding of how harmful e-cigarettes can be and how they can affect us mentally and physically.

In general, all of these negative and harmful effects are known to have an atrocious impact on the health of these young students and athletes. I am certain that these effects will arise in the near future if not now, if high school students and athletes do not stop the use of e-cigarettes.

Taking Action

E-cigarettes are an albatross athletes should not be experiencing under any circumstance. E-cigarettes create a significant amount of health risks and as an athlete, one should do the right thing by not partaking in any form of smoking. We need to step up and lead by example to eradicate the issue.

Some of the ways the U.S. Surgeon General's Report suggest when taking action include not being around the use of e- cigarettes, finding and visiting tobacco free locations, participating in research by ensuring schools/ college campuses are tobacco free, ensuring our living space, home, apartment, or dormitory is tobacco free, and being an example to those around us; get help if struggling with an addiction; helping those who may be struggling with an addiction. (U.S. Surgeon General's Report, 2021)

Although, this is not just an issue that needs to be addressed to just high school students and athletes, The National Federation Of State High School Associations recommends that that athletic directors address this issue to their athletes by organizing a presentation that addresses vaping and e-cigarettes use, examine and revise the school's tobacco and drug policies, encouraging vaping sensors to be installed in schools, and holding students accountable when found indulging in vaping. (Gertz, 2019) All of these suggestions are very vital to the stop of this epidemic. I am aware that we are a long way from preventing this issue as a whole; however, if we can follow the various recommendations indicated above, I am certain we will be several steps closer to eliminating this matter.

The Goal/ Objective

Throughout the duration of this project my goal/ objective was to inform high school athletes and young adults of the multiple adverse repercussions e-cigarettes and vaping will cause on

their health. I anticipated encouraging high school athletes and young adults to refrain from use of e-cigarettes and vaping by creating a five quick video clip series. My interest for the health of high school students, athletes, and young adults is very essential and e- cigarettes have become very popular; however, there exists a lot of uncertainty in the facts and harmful effects surrounding the use of e-cigarettes. My hope is that I make a difference by encouraging high school student athletes and young adults to stop the use of e-cigarettes to hinder the spread of this epidemic.

The Project

Throughout my project, I decided to create a private questionnaire and poll on Instagram receiving feedback from ten high school students pertaining to which digital platform would be preferred among high school students to maximize the potential reach. After receiving the feedback from these students, I obtained an idea of TikTok being the best resource to use for the project. I created a series of five TikTok videos that addresses the negative risks from vaping, presenting a short clip of the impact vaping has on COVID-19, useful tips to encourage and help individuals on their journey to stop vaping, reasons why you shouldn't vape; as well as, a comical twist with vaping scenarios as to what I should and should not do.

My experience when creating these TikTok videos was very challenging but rewarding. Attempting to create TikTok's for the first time, through trial and error when working the media source and looking up YouTube tutorials, made it a little easier throughout the process. In the process of producing the TikTok's, I felt like they allowed me to be creative and think outside the box. Coming up with material for the younger generation takes time, preparation, thought, and lots of consideration. I had to make the TikTok's fun, encouraging, and interesting all in one. I

am so obliged to be an advocate for high school student athletes, young adults, and others while helping to encourage eradicating the use of vaping in all communities. I hope my videos make a difference and long lasting impact on these various communities and support them on their journey to refrain from e-cigarette use.

Conclusion

In conclusion, both athletes and young adults should abstain from using e-cigarettes. There are a multitude of health risks and negative impacts that can occur from using this substance and the younger generations are most at risk. Throughout the paper, I addressed: 1) the multiple factors vaping has on athletes and young adults including and addressing the definition of an e-cigarette, 2) understanding what an e-cigarette is and its use, 3) the effect e-cigarettes has on one's behavior and how they conduct themselves, 4) underlying conditions that play a significant role if using e-cigarettes over a period of time, 5) signs/ symptoms that develop over the course of using e-cigarettes, as well as 6) the role that COVID-19 plays in addition to the use of e-cigarettes which provides a background of interest towards the introduction of vaping as a relevant connecting issue. Creating the series of TikTok's was a very enjoyable opportunity. Supporting and encouraging others on their decision to abstain from e-cigarette use by creating videos is such a worthwhile experience and I look forward to seeing the impact it will have on the younger generations. My reason for choosing this topic as my Senior's Honors Project was to encourage high school athletes and young adults to refrain from using e-cigarettes. I established this digital resource to make a difference by impacting the athletic community and the younger generations who need support to prevent and eliminate the use of e- cigarettes during the most sensitive and vulnerable period in their lives.

Overall, e-cigarettes are only used as a substitute for smoking and are simply used as a way to attract the younger generations. Athletes, young adults, parents, and guardians should become informed and concerned about e-cigarettes and the implications that can arise from its use. This critical public health issue gives us another reason and the opportunity to come together as one through educating, enforcing, and encouraging others of its relevance.

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