COVID-19 Pandemic and Inner-City Youth: E-Cigarette Use

Jeremy Klein[1]*, Alexandra Fales[1], Katey Cohen[1], Trang Pham[1], Hiu Ying Joanna Choi[2,3], Bradley N Collins[4], Stephen J. Lepore[4] and Jamie L. Garfield[2]

[1]Lewis Katz School of Medicine at Temple University, Philadelphia, Pennsylvania, 19140, USA
[2]Department of Thoracic Medicine and Surgery, Lewis Katz School of Medicine at Temple University, Philadelphia, Pennsylvania 19140, USA
[3]Clinical Family and Community Medicine, Lewis Katz School of Medicine at Temple University, USA
[4]Department of Social & Behavioral Sciences, Temple University, College of Public Health, 1301 Cecil B. Moore Ave., Philadelphia, PA 19122, USA

Abstract

Purpose: To understand the impact of COVID-19 and remote learning on youth vaping patterns at a Philadelphia public high school.

Methods: A sample of 653 students (Grades 9-12) completed a voluntary and anonymous online cross- sectional survey from October 30, 2020 to November 22, 2020.

Results: This study focused on 93 e-cigarette ever-users among 653 respondents. The COVID-19 pandemic has increased or not changed motivation to quit vaping in 86.0% (n=80) of ever-users. Seventy- two percent (n=67) of ever-users have contemplated quitting, with 56.7% (n=38) actively attempting cessation. Forty-six percent (n=43) of ever-users report vaping the same amount or more than prior to the COVID-19 pandemic. 6.45% (n=6) started vaping during the pandemic.

Conclusion: Nearly half of ever-users reported vaping the same amount or more than prior to COVID-19. Few students started vaping during the pandemic. Federal and state-enforced tobacco-free policies and school-based interventions cannot alone curtail youth vaping, especially during a pandemic. Investment in supportive relationships between adolescents and caregivers at home, as well as evidenced-based cessation resources is essential to curb the youth vaping epidemic.

Implications and Contribution: To our knowledge, this is the first study to address the sustained impact of COVID-19 pandemic restrictions on youth vaping practices.

Keywords: National Youth, Quarantine, Control policies, Caregivers, Demographics.

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Introduction

E-cigarettes are the most common tobacco product among youth today [1]. In 2019, 50.1% of nationally surveyed high school students reported ever using an electronic vapor product ("ever-users") [2]. Current e-cigarette use among high school students fell from 27.5% (4.11 million) in 2019 to 19.6% (3.02 million) in 2020 [3,4]. This reduction was the result of various tobacco control efforts including school-based educational initiatives, policies that increased the tobacco purchasing age to 21, flavoring bans and mainstream media coverage of EVALI [5,6]. In March 2020, public health guidelines called for the closure of schools and other non- essential businesses in most US cities. Early quarantine restrictions may have brought about a reduction in youth e-cigarette use. One study in the US reported 32.4% of adolescents quit vaping and 35.3% decreased their nicotine intake two months after shelter-in-place orders were instituted [7]. Another study conducted three weeks following emergency stay-at-home orders in Ontario, Canada documented a decrease in adolescence vaping prevalence from 16.6% to 11.5%; however, many of those who continued vaping, vaped more often [8]. This study aimed to understand the sustained impact of COVID-19 pandemic restrictions on youth vaping practices.

Methods

High school students at a large public high school in North Philadelphia took part in an educational series on the youth vaping crisis and the EVALI epidemic in November 2019. In response to community spread of SARS-CoV-2, public high schools in Philadelphia began conducting education remotely on March 13, 2020. A sample of 653 of high school students (grades 9-12) completed a voluntary and anonymous online cross-sectional survey from October 30, 2020 to November 22, 2020 (data can be accessed at https://www.surveymonkey.com/results/SM-FBBK3HPZ7/).

Results

Survey respondents (n=653) perceived vaping to be dangerous to overall health (average severity score 8/10). Almost three quarters of respondents (68.6%, n=448) reported that they were fearful of contracting SARS-CoV-2. Eighty-four (n=548) reported always wearing a mask in public.

This study focused on 93 e-cigarette ever-users among 653 participants who completed the survey. 31.5% (n=29) of ever-users currently vape during quarantine. Slightly more ever- users vape nicotine 28.0% (n=26) than THC 24.7% (n=23), and 4.3% (n=4) vape only flavorings. Of current users, 40.0% (n=11) vape both nicotine and THC. 80.7% (n=75) of ever-users initially tried vaping out of curiosity. 40.9% (n=38) of ever-users state their friends introduced them to vaping. 49.5% (n=46) report vaping in their own home.

The COVID-19 pandemic has either not changed or increased the motivation to abstain from vaping in 86.0% (n=80) of ever-users. Seventy-two percent (n=67) of ever-users have thought about quitting, 56.7% (n=38) of which are actively trying to quit. Despite this, 46.2% (n=43) of ever-users report vaping the same amount or more than prior to the COVID-19 pandemic. 6 respondents (6.45%) started vaping during the COVID-19 pandemic.

Discussion

The National Youth Tobacco Survey (NYTS), collected in early 2020 before COVID-19 restrictions, reported the most pronounced reduction in youth e-cigarette use since 2011 [3]. In the initial months of quarantine, further decreases in youth vaping frequency were reported [7,8]. To our knowledge this study is the first to report that the reduction in e-cigarette use may not be sustained after months of imposed COVID-19 restrictions.

While adolescents may be less inclined to vape without the social reinforcements provided by the traditional school setting, social isolation, convenience and discreteness afforded by the stay-at-home orders may thwart well-intentioned cessation attempts [9]. In addition, "quarantine fatigue," or the perceived exhaustion with the restrictive lifestyle adopted to slow the spread of SARS-CoV-2 may account for increased risk behaviors in some [10,11], including substance use and failure to adhere to imposed restrictions. The 103 students (16%) in this cohort who reported not wearing a mask in public "all of the time" may exemplify such fatigue.

Adolescents learn about the perceived risks and benefits of tobacco products, including e- cigarettes, from a variety of sources; media, friends and family, formal lessons learned in school and informal messaging in the school environment [12]. In cooperation with federal, state, and local tobacco control policies, remote learning offers a unique opportunity to shift focus away from school-based programming and leverage home-based cessation strategies. Caregivers must be educated and empowered to recognize vaping patterns and signs of nicotine addiction in adolescents. Parents and caregivers need guidance to have productive conversations with youth about e-cigarette use, including dispelling common myths and misunderstandings, imposing household restrictions to decrease use and supporting cessation attempts [13,14].

Conclusion

This data sheds light on how the COVID-19 pandemic and remote learning has impacted youth e-cigarette use patterns and motivations to quit. More research is needed to better understand the connection between adolescent mental health and e-cigarette use during the pandemic. Federal and state-enforced tobacco-free policies and school-based interventions cannot alone curtail youth vaping, especially during a pandemic. Investment in supportive relationships between adolescents and caregivers at home, as well as evidenced-based cessation resources is essential to curb the youth vaping epidemic. Whether learning remotely or attending school in person, millions of youth e-cigarette users remain. Many are motivated to quit, and renewed attention to the vaping crisis can help them get the support they need to be tobacco-free.

Limitations

Survey results are subject to recall bias. Additionally, high school students surveyed may not be representative of state-wide or national demographics. 126 students reported vaping at least once in their life, however only 93 ever-users completed the remainder of the survey. Vaping patterns and motivations of these 33 students (26%) could not be determined.

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***Correspondence to:**

Jeremy Klein
Department of Anesthesia
Lewis Katz School of Medicine at Temple University
USA
Tel: +8473633352
E-mail: jeremy.klein@temple.edu