

Exploring Stakeholder and Parent Perspectives of a County Response to Adolescent Vaping and E-Cigarette Use

Journal of Drug Issues

1–22

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DOI: 10.1177/0022042621993495

journals.sagepub.com/home/jod



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Abstract

In the United States, regular cigarette use has steadily declined over the years; however, it has been met with an increase in vaping and e-cigarette use. In Tampa, Florida, this trend has been found especially prevalent among school-aged youth. To combat issues of substance use among youth and prevent criminalization for nonviolent crimes, school-age youth cited for use and possession of tobacco products in Hillsborough County were mandated to attend the Youth Tobacco Awareness Course (YTAC). The aim of this study was to investigate YTAC for its perceived effectiveness and usefulness in mitigating adolescent e-cigarette use. Classroom observations, parent focus groups, and program stakeholder interviews were conducted to comprehensively evaluate this program. Findings from this evaluation led to a deeper understanding of the barriers and facilitators to an effective course, the needs and perceptions of program stakeholders, as well as recommendations for improved future interventions.

Keywords

vaping, e-cigarettes, community-based program, smoking cessation, focus groups, adolescents

Introduction

E-cigarettes are battery-operated devices that are used to inhale an aerosol that can contain nicotine, flavorings, and other substances such as marijuana or THC (National Institute on Drug Abuse [NIDA], 2019a). Vaping consists of puffing from the device which activates the battery-powered heating device, vaporizes the liquid in the cartridge, and results in a vapor (Centers for Disease Control and Prevention [CDC], 2020). Adolescents in the United States have been found to be progressively inclined to use e-cigarettes; this increase may be due to the easy availability, attractiveness and taste of e-liquid flavors (e.g., strawberry, chocolate, and mint), and misconceptions that e-cigarettes are safe. E-cigarettes have recently been the cause of numerous and serious lung disease outbreaks across the United States, some resulting in death. As of mid-February 2020, a total of 2,807 cases of hospitalizations or deaths associated with vaping-related lung

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injuries were reported (CDC, 2020). Officials at the CDC have found strong evidence linking vitamin E acetate in illegally distributed products to be the cause of the outbreak, specifically THC cartridges used for vaping (CDC, 2020).

In the United States, regular cigarette use has steadily declined over the years. Among 12- to 17-year olds, the rate of past-month cigarette use declined from 13% in 2002 to 5.6% in 2013 (NIDA, 2015). However, young people are now vaping substances using electronic cigarettes, also known as e-cigarettes or e-vaporizers. Nationally, between 2017 and 2018, vaping increased from 13.3% to 17.6% among eighth graders, 23.9% to 32.3% among 10th graders, and 27.8% to 37.3% among 12th graders (NIDA, 2019b). National studies have indicated that the majority of illicit drug use (54.1%) begins during the teenage years (under 18 years of age) and 70.3% of new users initiate drug use with marijuana (CDC; NIDA, 2015). In addition, nearly nine out of 10 cigarette smokers first try cigarette smoking by age 18 (CDC, 2019b).

Similar to national trends, in the State of Florida, the Florida Youth Substance Abuse Survey (FYSAS), which assesses the risk, protective factors, and prevalence for substance use, found cigarette use decreased over time, marijuana use has remained stable, and e-cigarettes use dramatically increased (Florida Department of Children and Families [DCF], 2019). In 2018, the past 30-day rate of e-cigarette use (13.7%) was more than 5 times the rate of conventional cigarette use (Florida DCF, 2019). Similar to the national trends, among middle and high school students in Hillsborough County specifically, cigarette use has decreased from 17.3% in 2012 to 7.9% in 2018 while e-cigarette use remained at an average of 25% between 2016 and 2018 (Moore et al., 2017). In 2018, after alcohol use, e-cigarettes and marijuana were the second and third most used substances among students (after alcohol) (Moore et al., 2017). With this increased use of e-cigarettes, it is imperative to understand not just the health impacts of their substance use choices, but also how their behaviors can be most effectively mitigated to prevent future use.

Health Effects of Vaping and E-Cigarette Use for Adolescents

According to NIDA, nicotine is an addictive substance derived from tobacco that can trigger compulsive drug-seeking behaviors despite negative health effects (NIDA, 2019c). The surge of endorphins, brief euphoria, and increases in dopamine levels all reinforce the continued use of tobacco products (NIDA, 2019c). Repeated exposure, especially at a young age, leads to altered brain chemistry and circuitry (NIDA, 2019c). The effects of marijuana, even when consumed using an e-cigarette, are similar to those of nicotine (Office of Adolescent Health, 2019). Research indicates that marijuana use can lead to altered brain structure, connectivity issues, and blood flow problems (Office of Adolescent Health, 2019). These changes during adolescence can lead to long-term effects such as lower IQ, poor memory, and attention deficits (Office of Adolescent Health, 2019). Individuals who start smoking marijuana before the age of 18 are 4 to 7 times more likely to develop a marijuana use disorder (Office of Adolescent Health, 2019). One factor found to decrease the risk of substance use is increased parental involvement.

Facilitators of Youth Vaping and E-Cigarette Use

Lack of parental involvement. When not in school, parents and guardians play a large role in children and adolescent lives. Positive parental support can act as a protective factor. A parent-child bond (i.e., communication, support, involvement) can make a large impact on whether or not a child is able to refrain from or stop substance use (NIDA and the U.S. Department of Health & Human Services, 2019). Lack of knowledge about drug use or education among parents, as well as personal use of substances at home, is an issue which may affect their child's substance use habits (NIDA and the U.S. Department of Health & Human Services, 2019). Some parents are

unaware of risks or believe e-cigarettes and marijuana use are not harmful to one's health; therefore, they can be unaware their child is using or even choose not to address their child's drug use (Alexander et al., 2018). When a parent smokes, they create a home environment where e-cigarette use is acceptable (Alexander et al., 2018). Existing research indicates that parents may rationalize e-cigarette use as a safer product than smoking regular cigarettes (Alexander et al., 2018).

Accessibility of e-cigarette products. As e-cigarettes have become more popular, research has shown that youth have less trouble gaining access to e-cigarette products. One avenue for youth to gain access to these products is through retail stores. Vape shops (retail stores that offer a variety of e-cigarette products) are found to receive a significantly higher amount of violations for selling to minors than other types of retail stores (Roeseler et al., 2019). Data from the 2018 National Youth Tobacco Survey show that 16.5% of middle and high school e-cigarette users under the age of 18 reported buying e-cigarettes from a vape shop within the past month (Liu et al., 2019). In addition to retail stores, online shopping has been found to be an easy way for youth to gain access to e-cigarettes. Williams et al. (2015) recruited 11 children aged 14 to 17 in North Carolina to purchase e-cigarettes through 98 different online e-cigarette vendors. A total 76.5% of purchases were successfully delivered with no attempts of the delivery companies to verify age, and 95% of these deliveries were simply left at the door. According to the 2018 National Youth Tobacco Survey, 5.7% of middle and high school e-cigarette users under the age of 18 reported buying e-cigarettes from online sources (Liu et al., 2019). One of the most common ways for underage youth to gain access to e-cigarettes is from social sources. According to the 2018 National Youth Tobacco Survey, 72.6% of middle and high school e-cigarette users reported obtaining an e-cigarette from a friend, family member, or someone who is not a friend or family member (Liu et al., 2019). Of those users who received e-cigarettes from social sources, a total of 58.6% reported obtaining them from a friend, making peers the most frequently used social source. Peers are not only an easy way for underage youth to gain access to e-cigarettes, but they may also influence underage youth to use these products as well.

Peer influence. Compared with adults and children, adolescents are more likely to make risky decisions and participate in risky behaviors (Steinberg, 2008). There is a growing body of evidence linking peer influence as one of the major factors driving this variance in behavior and decision making. Both self-report and experimental data have shown that adolescents are more likely to be affected by peer influence compared with adults (Gardner & Steinberg, 2005; Steinberg & Monahan, 2007). In addition, a strong predictor of adolescent delinquent behavior is having friends who participate in delinquent behaviors (Dishion et al., 2002). The same has been found with e-cigarette use such that having more peers who use e-cigarettes was shown to be associated with a greater chance of personal e-cigarette use in adolescents (Rocheleau et al., 2020). Adolescents commonly report that peer influence is a common factor driving their e-cigarette use (Barrington-Trimis et al., 2015; Kong et al., 2015). For example, a survey conducted at a university in Tampa, Florida, asked 1,000 students what their primary reason to initiate e-cigarette use with the majority reporting peer influence as the main factor (Martinasek et al., 2018). Based on what is known about peer influence affecting decision-making and behavior in adolescents, it is important to be cognizant of its impact on e-cigarette use. As such, an effective and evidence-based community response is vital to combat the current rise of e-cigarette use in youth.

Community Response to Youth Vaping and E-Cigarette Use

Evidence-based interventions for youth vaping and e-cigarette use. As e-cigarette use has increased to emerge as the leading form of tobacco consumption among adolescents, tobacco cessation researchers have started to focus their efforts on tailoring interventions to be effective for this

specific population. Existing literature on smoking cessation recognizes the importance of quitting smoking as quickly as possible after the habit is first formed; those who begin smoking in their adolescence and continue into adulthood have been shown to have a reduced life expectancy of 20 years (CDC, 2019b). For adults, evidence-based solutions for smoking cessation include a combination of behavioral supports and pharmacotherapies (Stead et al., 2016; Stead & Lancaster, 2012). The behavioral interventions most supported by empirical evidence include written educational materials, group therapy programs, individual counseling (both in-person and telephonically), and tailored self-help materials (Lancaster & Stead, 2005, 2017; Stead et al., 2013, 2017). Some researchers suggest there are several behavioral reasons that the smoking cessation process for adolescents might be different compared with adults, namely because of this group's difference in lifestyle and high sensitivity to social influences and media messages (Fانشawe et al., 2017; Sargent et al., 1998).

Consequences of substance use in schools. As youth under the age of 18 spend most of their time in schools, middle and high schools are tasked with disciplining youth for illegal drug use. School resource officers (SROs) play an integral role in apprehending and citing youth who are in possession or using drugs on school premises (Skager, 2013). Almost all schools in the United States have illicit drug policies; however, these policies and procedures typically vary including different types of content, response, and enforcement (Skager, 2013). The most typical consequences enforced by the school consist of in-school and out-of-school suspension for varying lengths of time (Skager, 2013).

In addition to school-enforced punishment, there are legal consequences to underage drug possession and use. As of September 2018, 48 of the 50 states (not including Michigan and Pennsylvania) have passed legislation that prohibits the sale of e-cigarettes to minors (individuals less than 18 years old) (CDC, 2019a). Only 18 states (not including Florida) have passed legislation which requires a retail license to sell e-cigarettes over the counter (CDC, 2019a). In Florida, statute 569.11 states that individuals younger than 18 years old caught in possession of tobacco products must attend a school-approved anti-tobacco program and pay a \$25 fine with subsequent violations or failure to meet the court requirements can lead to driver's license suspension or revocation (The Florida Legislature, 2018). In Hillsborough County specifically, individuals aged 18 and younger found on school premises in possession of nicotine products or drug paraphernalia are mandated to attend the Youth Tobacco Awareness Class (YTAC) which is provided by the Hillsborough County Anti-Drug Alliance (HCADA).

Current Study

As the rate of e-cigarette use steadily increases in the Hillsborough County area, prevention, awareness, and educational programs are increasingly important for adolescents. There have been concerns from the HCADA that their current YTAC program is not effective enough to curtail the increased adolescent e-cigarette problem in the community. This study was conducted to better understand the factors that might be influencing the impact of YTAC, a community-based educational program, including an analysis of perspectives from program stakeholders and parents of adolescents enrolled in the program. The research question pursued in this study is "what is the perceived effectiveness of YTAC based on parents' and program stakeholders' knowledge, attitudes, and experiences?" To answer this question, the study follows qualitative methodology and focuses on four main themes that contribute to answering the research question. First, perceptions of the problem of e-cigarette use are evaluated to understand whether stakeholders hold similar beliefs about the intention and need of the intervention. Second, their experiences and knowledge of the program's process are considered to identify inconsistencies. Third, stakeholder perspectives of the ways in which adolescent e-cigarette use is facilitated is

analyzed to help determine whether the program adequately addresses these concerns. Fourth, recommendations for ways to improve the intervention are gathered and reported to identify where stakeholders are finding weaknesses but also what they would feel are feasible or reasonable adaptations to future iterations of the program. Results are intended to reveal challenges, beliefs, and inconsistencies in experiences that will aid in program improvement initiatives to ultimately better mitigate adolescent e-cigarette use.

HCADA Program Description

HCADA is a nonprofit organization that began in 1989 in response to the need in Hillsborough County for substance use initiatives for both adults and children. Since its inception, the organization has worked to serve as an advocate for several local substance use programs (HCADA, 2019). They manage numerous task forces (i.e., Marijuana Task Force, Prescription Drug Task Force, Tampa Alcohol Coalition, and the Tobacco Free Partnership), as well as provide resources, education, and support services such as drug disposal information, prevention and recovery programs, and local substance use support groups (HCADA, 2019). The YTAC, hosted by the HCADA, is a 2-hr psychoeducation program for youth under the age of 18 years who are caught smoking or in possession of tobacco products in the community or on school grounds. The YTAC program began in 2005 with a mission to curb youth tobacco use at a time when traditional cigarette use among this population was more prevalent. In efforts to continue engaging and educating youth amid changing drug use trends, YTAC has evolved to offer guidance on different types of tobacco and drug use. With the increased rates of e-cigarette vaping, the majority of the course materials are now targeted to provide education on the risks and effects of e-cigarette use accordingly.

Figure 1 depicts a flowchart of the youth tobacco citation process. When students are caught possessing or using tobacco products, they are issued a civil citation from an SRO. The citation states the specific offense that the student has committed and requires the student to pay a \$25 fine. At this point, student offenders are required to attend an YTAC class within 60 days of being issued a citation. The program requires the student to pay \$15 at the beginning of the course, which is held every third Thursday of the month. The course lasts approximately 2 hr, and contains information relating to the risks associated with tobacco, with a strong emphasis on e-cigarette usage. Once they have completed the course, students are also required to meet with the juvenile court judge overseeing the tobacco citations. If the student does not complete the course nor appear in front of the judge within the 60-day period, then their driver's license is withheld until all of the components of the course are completed. If the student does not currently have a license, then they are prevented from applying for one should they try to do so.

Method

This study used qualitative methods to explore the perceived functionality of the HCADA's YTAC program. The use of semi-structured interviews and focus groups provides in-depth and multifaceted insight for understanding the YTAC program, the county citation process, and other consequences attempting to hinder e-cigarette use among adolescents in this community. Due to the evaluative and exploratory nature of this study, The University of South Florida (USF) Institutional Review Board (IRB) exempted this study from review.

Data Collection and Participants

For this study, researchers conducted observations of the intervention process and collected data from in-depth one-on-one interviews and focus groups with stakeholders.

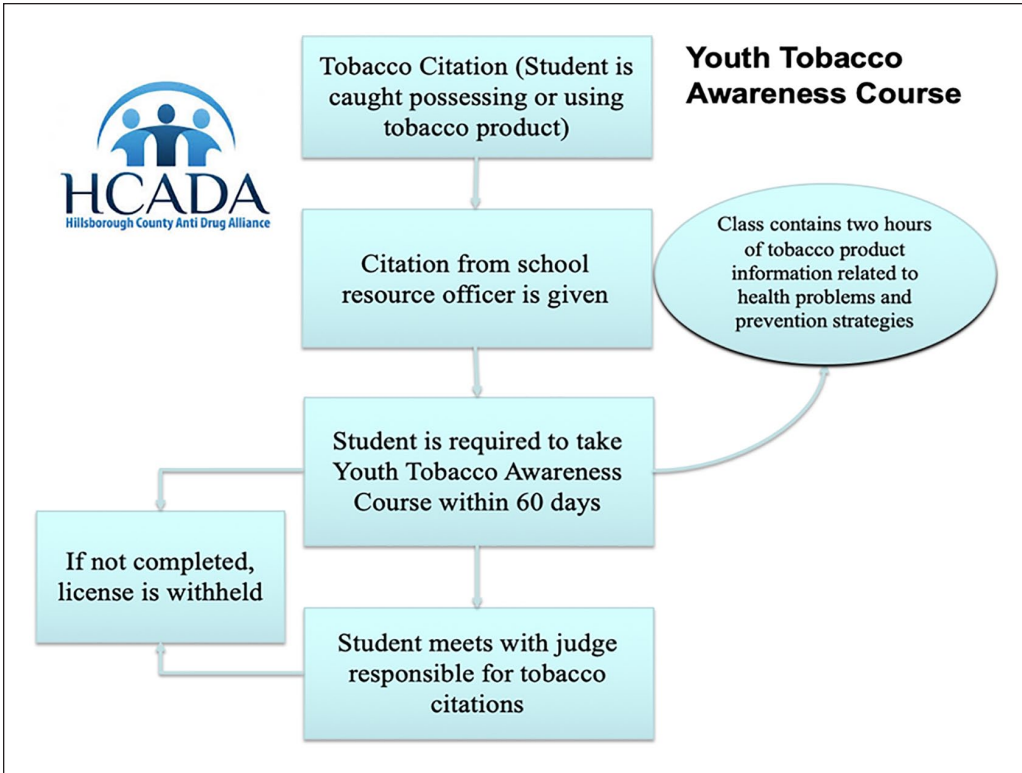


Figure 1. Youth tobacco citation process in Hillsborough County.

YTAC observations. Contextual information was gathered from observations of two Tobacco Awareness courses, two HCADA meetings focusing on tobacco usage, and a local Town Hall meeting in which HCADA members spoke about problems associated with tobacco product marketing in the community. The authors observed two instances of the YTAC being administered at the local courthouse to two groups of approximately 20 students in either middle school or high school. Observations were made inconspicuously from the back of the room for the complete 2-hr duration of both classes. These field experiences were used to gain a better understanding of the HCADA YTAC and the current problem of adolescent tobacco product usage in the Hillsborough County area.

Program stakeholder interviews. Semi-structured interviews ($n = 6$) were conducted with program stakeholders involved in the program. This included three members of HCADA (Executive Director, Chair, and Youth Coordinator), 13th Judicial Circuit Court Judge (who oversees tobacco citations), and two SROs (one from Tampa Police Department School Resource Officer and one from the Hillsborough County Sheriff's Department). Interviewees were contacted through email to determine a convenient meeting time and location. Interviews were conducted in person at a location of choice by the interviewee and lasted for approximately 45- to 60-min intervals.

Focus groups. Three focus groups were conducted with parents of students attending the YTAC. While students participated in the mandated course, parents were asked at a first-come-first-serve basis to discuss open-ended questions regarding their perceptions of the course, attitudes toward substance use, personal substance use habits, barriers that inhibit their child from substance use

prevention, and any future suggestions or recommendations toward the course and citation process. Approximately 50% of parents asked to participate in the focus group agreed and stayed at the court to participate. Those who elected not to participate did so due to conflicting commitments or errands that prevented participation, or simply did not want to be part of the conversation. Each focus group was completed in an average of 1 hr and 30 min, with a total of 18 parent participants ($n = 18$). Consent forms were distributed to parents prior to beginning the focus groups. No personal or identifying information was obtained from the parents.

Data Analysis

The responses from the six program informant interviews and three parent focus groups were audio recorded with permission from all participants. YTAC observations were informally analyzed and were used as a means for researchers to gain a better understanding of the course process and procedures. The semi-structured interviews and focus groups were transcribed using third-party secure transcribing services (TranscriptionWing.com and Rev.com) and the transcriptions were used for coding and analysis. The transcribed semi-structured interviews and focus group documents were uploaded to Atlas.TI, a qualitative data analysis software (Dowling, 2008). Thematic analysis was used to evaluate the transcriptions (Guest et al., 2012). First, the research team individually read through the transcripts of each interview and focus group, noting themes as they arose. The individual lists of themes created by the separate researchers were combined as a basis for a codebook, which was collectively and iteratively reviewed until consensus was achieved. Each researcher was assigned to code one focus group transcript and two researchers coded three semi-structured interviews each. Next, the codes were organized into four main themes: (a) Perceptions of the Problem; (b) Facilitators of Use; (c) Process and Procedures; and (d) Recommendations and Improvements (Table 1). The main themes were further evaluated and organized based on patterns of occurrence and frequency of the included coded utterances (Appendix 1). Finally, with consideration to the research questions and the review of the literature, explicative quotes were identified and earmarked for use in the “Findings” section.

Findings

Semi-Structured Interviews and Focus Groups

The semi-structured interviews provided valuable information regarding the context in which YTAC operates. By interviewing the SROs who administer the citations, the judge who enforces and mandates certain activities, and members of HCADA who oversee and implement the course, we were able to understand the complexities of the system and the role of each facilitator. The perspectives from parents supplemented findings from the program informant interviews and allowed for cross analysis between perspectives from different stakeholders. Below, overlapping findings from the semi-structured interviews and parent focus group are discussed by four main themes: Perceptions of the Problem, Facilitators of Use, Process and Procedures, and Recommendations.

Perceptions of the problem. All program stakeholders expressed concern for e-cigarette use, particularly the increased prevalence. There is a clear consensus that youth e-cigarette usage is increasing dramatically among both middle and high schoolers. The judge expressed concern for how widespread use was among younger youth, particularly those in middle school. The HCADA Director noted that the YTAC facilitators realized e-cigarette use was a problem approximately 2 to 3 years ago when youth cited for tobacco usage at school were found to actually be using e-cigarettes instead of traditional cigarettes:

Because I see it as rampant and it's increasing, and I don't see any sign where it's slowing down. It's just, it's rampant at this point in time throughout the, I haven't seen a high school that it's not out there. And, and I'm seeing younger, I'm seeing middle schools. (Judge)

Yes, I do believe it's getting worse. And we first noticed it through the class when the kids started coming to the tobacco class with the tobacco citation probably two, three years ago. And, and they, um, were actually vaping using e-cigs. (HCADA Director)

Furthermore, all parents within focus groups considered youth e-cigarette use as being an issue that needs to be taken seriously. There was an overall general concern for e-cigarette use; however, several parents mentioned having issues understanding how the products worked, what exactly their children were vaping, and the health risks associated with its use:

I'm like, I don't know. But what are they smoking? That's a big concern.

I absolutely don't think it's okay.

I don't even know how it works. Like I said, I hear so little, but I don't know.

Although all parents acknowledged that e-cigarette use is negative, they had different ways of managing their child's choices and behavior in response to their e-cigarette use. Parental values around how to manage their child's behavior or provide guidance to them moving forward was variable between focus group participants. Some parents opted for using scare tactics and more punitive punishment while others wanted the lessons learned to be derived through the use of transparent communication, building respect, and providing education. Others felt they didn't want to be involved in any component of the consequences for their child's behavior and felt it was the child's sole responsibility to take accountability for their actions:

He was like, cause I've always told him, I said, you'll get caught. You're going to get and when you do. I'm just going to look at it. I'm not paying for nothing.

So that's what scares me and I want to like scare him, scare the bejesus out of him so he don't do it. You know what I mean?

You know, you have to have a good relationship with your kids. Like you can't be too strict . . . You know there has to be a line of mutual respect. Yeah, but you can't be too strict or too soft. You know? You gotta have like a happy medium.

Coping strategies such as having their child go to the gym and restricting use of their child's phone were discussed from parents during focus groups. One parent felt that it was necessary to enroll their child to therapy in order for them to receive help with their electronic cigarette use.

Facilitators of use. Facilitators of use is defined as any factor that enables or promotes drug use among youth. This includes subthemes such as peer pressure, high accessibility, low cost, popularity, and others (marketing, flavoring, packaging, etc.). Program stakeholders mentioned the products being popular and easy to access, but most often discussed how the marketing of flavored e-cigarette products are particularly appealing to youth.

Flavors were also a major concern for parents, whereas traditional cigarettes were considered "gross and smelly," e-cigarette cartridges and liquids had fruity aromas that made them less repulsive. This made parents worry that youth are unable to comprehend the health risks of such a behavior because it no longer seems risky if it tastes good:

Cigarette packs now have that Surgeon General's warning or whatever. That's not on the vape thing, because it's fruity and it tastes good, and it's fun.

With the flavors masking the fact that there's actual addictive drug in there, kids are just not able to comprehend that I know it tastes good, but it's not good for you.

With cigarettes, you could, "Oh, it stinks. It's gross and it smells. It's expensive, and you don't have that with vaping. It's fruity and it's easy to hide, and it's convenient. You can do it in the bathroom."

For these reasons parents generally felt that e-cigarettes have become a new trend that is facilitating substance use by enticing their children and leading them to disregard the subsequent health effects. Due to the different features such as light up chargers, sleek design, and multiple flavors, parents expressed that their child is having trouble grasping how something so cool could potentially be so deadly. All participants expressed a sincere concern specifically for e-cigarettes, and not any other tobacco products. In addition, all parents within focus groups mentioned their child being cited for e-cigarette products. When asked to speak about tobacco use in the community, all participants in the study focused on e-cigarettes:

It's being romanticized. They make them slick, they're cool, they have light-up chargers.

It's just that new trend that's available, they think it's cool, but they don't know how severe it is [to their health].

The versatility of e-cigarette products used to consume other drugs was also mentioned as a contributing factor for youth to possess and use these devices. Several program stakeholders, especially SROs, mentioned that students use these devices to vaporize not only e-cigarette juices with or without nicotine, but THC products as well. Program stakeholders also mentioned tobacco companies blatantly marketing their products to younger users, with inviting flavorings being one of their strategies. Finally, some noted that by having parents or other family members using e-cigarettes, students were more susceptible to use them because they did not perceive the products to be as dangerous:

It is just no question they are being marketed to. (Judge Interview)

Mainly it's nicotine but it's also marijuana. So, it's just, yeah, it can be any combination and they just seem to be going from one to the other. (HCADA Member)

Some of them are seeing it in their houses and I mean their parents are doing it. So, this has forced some of them to use, because the parents are okay with that. (YTAC Instructor)

Similarly, parents perceived that older individuals were obtaining the products and "selling it to these little ones." Therefore, there is a belief that youth themselves are not purchasing straight from the supplier, but younger adults who are of legal purchasing age are obtaining these products and then selling them to children in schools:

There are 19, 20, 25-year-old kids that are selling it to these little ones, 14-16, because they know where to get them.

It seems like every time we come up with a way to combat it, there's a way or 10 ways they find to figure out how to do it, or keep doing, or get it, right? Because you're supposed to be 18 or older to get it. Well, some of the kids that are seniors are 18 or have older siblings that will get it.

While program stakeholders more often mentioned family and parental influence on an adolescent's e-cigarette use, their parents were more worried about peer pressure. Parents felt that their child would not have participated in such a behavior if it wasn't for other youth who encouraged their involvement. Youth are highly influenced by one another, therefore in many instances, parents felt their child is learning behaviors from kids who have already become addicted to this habit and therefore end up participating to "fit in":

It doesn't matter what part of town you live in or anything. It's everywhere. So, the high school that he went to years ago, like half of their cheerleading squad, girls, got kicked off the team for vaping and stuff.

I think it's who they hang out with too. Kids are a big influence on the choices that kids make.

Process and procedures. When asked about the citation process, it was clear that different stakeholders had different perceptions about what occurred post-citation. One of the biggest inconsistencies was in regard to whether or not the judge needed to be seen for each citation. One SRO noted that they believe the student is required to see the judge, whereas another SRO claimed the student does not need to see the judge. The judge confirmed that he believes every student is required to appear in front of him in court. Most stakeholders were aware of the fines and the time limit to complete the tasks:

I thought that the citations required an appearance and they had to, they had to see the judge and then the fine. You know, they can either pay the fine or do the community service hours one or the other because it's all printed on the back of the citation. Uh, I don't necessarily keep up with the ins and outs. (SRO R)

As far as I know, they don't see a judge. Um, they have so many days to contact. Um, um, so many days too. I think it's 30 days to pay a fine and then 60 days. Uh, don't quote me on that. But um, to go to a tobacco class, if they don't go to the class, then their driver's license could be withheld. (SRO J)

Yes, they are required to come in front of the court . . . Eventually they have to see me. (Judge)

During focus groups, parents spoke of how they were either misinformed or not informed at all about the youth tobacco citation process associated with the YTAC. With these instances, parents were frustrated with the logistics of the program and the citation process. They believed that something needs to change so that parents are not left in the dark:

He gave me two options, "Pay a half and go to class or just pay the full amount and you're done." If it wasn't for me calling to inquire about the notice of hearing I got in the mail, I would never have known about this class because I mailed the citation in, which is on the back.

Nobody is on the same page with the same information. It's ridiculous.

Although several parents mentioned that they were misinformed or not informed at all about the citation process involved with their child, there were more comments about positive interactions with program facilitators than negative. Parents mentioned that principals, SROs, and the judge were pleasant and understanding. They believed that although the logistics of the program were not perfect, the people involved with it were pleasant to work with:

The officer explained everything that I would have to pay and that I would have to come to the class. And he was very nice, you know, explained everything to me and was very understanding.

I was there within maybe about 20 minutes. And so the resource officer told me the problem and she got caught vaping and they went through the whole process. They were very nice, very nice there. And um, told me everything that we had to do.

In the parent focus groups, discussion of inconsistencies and displeasure with consequences implemented by the program was prevalent. When focus group participants discussed in-school consequences, they were mostly negative reflections and critiques. They felt the punishments enforced at school were putting their children more at risk of future negative behavior, limiting their education, and exposing them to negative influences:

And then he said that he told me everything and then gave me the letter and said that they're gonna take him off of the program and that they were suspending him for five days and in those five days I would have to get him into another school.

Now, they do have an alternative and say that she can go to this alternate school and be able to do some work and make it up but then you're subjecting your child to the lowest level of hoodlums and I'm not doing that either.

Parent focus group participants complained that the use of out-of-school suspension was particularly detrimental to their child's school performance. They voiced that this type of consequence was not felt by the student to be a true repercussion of their behavior and that in-school suspension was preferred over out-of-school suspension:

Then I get a call from the AP, which is the principal, and he tells me their punishment, which is two days out of school suspension, and I was a little short with him for similar reasons and I said I don't think that's a good idea. He's going to miss assignments. He's going to miss—can we do in-school suspension? He said that this was our policy regarding this nature of this crime or whatever he said.

So he was like, "Oh, long weekend!" I was like, "No . . . Not happy with it . . . Then it affects their grades if they're not in school doing the work."

Not every teacher provided the work that he could do the catchup. Some teachers do. If you do out-of-school suspension, you should have the right to be able to stay in step with your class.

For consequences invoked by the school or by the criminal justice system, the idea that consequences invoked by the school or criminal justice system were inconsistent or inappropriate was also discussed. Parents thought that the punishments were not the same between all student perpetrators and/or the type of punishment was not a match for the type of violation committed:

Because with kids, that's when they seem to work from us with consistency and consequences and they're probably like, "Oh, my friend did it and he only got one day," they're more likely to do it . . . Then if they hear about, "My friend did it and he got five days." They might not be as likely to take that chance.

Why are the punishments different? Why did you get five days and mine got three?

You shouldn't have to see a judge for smoking an e-cig.

Recommendations and improvements. Although all program stakeholders believed that the YTAC should continue in some capacity, there were also several suggestions for ways to improve the effectiveness of the course or other repercussions in conjunction with the course. Examples include raising the stakes and increasing inconvenience by raising the fine, writing a letter to the

judge in charge of the citation process, writing a paper about the dangers of using e-cigarettes, requiring community service hours, and increasing parental involvement. In addition to these consequences, a member from the HCADA mentioned that implementation of a course focused solely on e-cigarette cessation could be more effective for youth who may already be addicted to using these products:

I think there should be something else. Something to make the fine higher, something to also inconvenience the parents. (SRO J)

One of the things I was thinking about was having them write a letter to the judge. It would probably be me writing a letter saying this is what I've learned and what, what I'm going to do to make sure I stay away from doing this again . . . sometimes when you have to put pen to paper, when you have to start thinking about what you're doing, it might reinforce your own thoughts about that . . . hearing from your parents and hearing from the resource officer, hearing from the judge, then hearing from the principal then hearing it from it in the class and now writing about that and talking about what you've learned. (Judge)

We need to develop something beyond the course for those that are second, third, fourth time offenders. Because obviously the courses aren't helping them. (HCADA Director)

They could be addicted. I mean they could be doing this every day and so they actually need like a stop vaping cessation class. (HCADA Member)

Many stakeholders also expressed the need for parents to be more involved overall. One SRO noted that parental involvement may increase the attention given to this issue of e-cigarette use. The YTAC instructor noted that working with some parents to solve more systematic issues, such as family dysfunction, can lead to better outcomes for youth (decrease in e-cigarette usage). Many stakeholders expressed concern that parents do not think e-cigarette use is a problem and therefore are not adequately disciplining their children. As the judge noted, some parents explain to him that they know their child should not be using e-cigarettes at school; however, from the judge's point of view, the youth should not be using at all:

Get the parents more involved and more inconvenience and they might pay more attention. (SRO J)

We need to walk hand in hand with the parents. Because when you look at some of, most of the kids that come to our class, there is dysfunction [in the family]. (YTAC Instructor)

Parents are like, "yeah, I told them not to do it" or "yeah, you shouldn't be doing it in school. Not that shouldn't be doing it at all. This is a problem." (Judge)

A majority of program stakeholders believed that the course was an appropriate intervention for first-time offenders, a good first step to provide students with current research and appropriate information to help prevent use in the future. Some mentioned that additional steps need to be taken in conjunction with the course to have a greater impact on student e-cigarette use. For repeat offenders, it was mentioned that more significant and suitable consequences might be needed to have a lasting impact on future use. In addition, the need for the course to be evaluated was mentioned by a HCADA member as a means to provide clear evidence of e-cigarette prevention and the impact on student attitudes toward tobacco products:

I think the program is effective in the sense that it provides appropriate consequences. I think in some instances it does get their attention and listen, you know, at the end of the day, if someone's paying a

fine, sometimes you think twice about it, you know, if they go to see a judge, sometimes they do think twice about it. (SRO R)

Well, I mean I think it's, they're learning information, but everything that I've learned over the years of being in prevention is that education is just one component and it doesn't at all ensure behavior change. So, you have to use like maybe motivational interviewing or, I mean you have to do something more than just give educational information. (HCADA Member)

Among the three parent focus groups, recommendations for improvements fell into three categories: parental education, youth/student education, and consequences. Suggestions for parental education included creating a pamphlet with critical information and definitions to help parents develop a basic understanding:

I feel like you could start with a pamphlet that parents could research—I don't even know all the language, to be honest, but where they could at least research that to see or attend it because the kids know.

For youth education, parents asked that they be exposed to the health consequences of their behaviors. This included meeting youth who have suffered from vaping illness, taking educational classes in smaller group settings, and being provided graphic and detailed information. Parents find that their children might not listen to them, but their peers could have a larger impact:

I think, at this age, they just think that they're indestructible, and so, really, how do you get that across to them, to think eventually maybe as kids are being hospitalized with respiratory distress and things like that, but maybe bringing some of those kids in to share their experience at some point may help if they regret their decision after the fact.

Instead of the auditorium-type base classes, they don't really take it seriously, put them in a small setting, let them talk and take it seriously.

Maybe the repetition of hearing from different people in different ways.

Graphic and detailed. Don't sugarcoat it.

You know if they have like you know assemblies where all the kids meet and maybe they have like a big screen up and they let kids watch to see like kids hospitalized because of it. People dying because of it, you know, and from start to finish, what, how detrimental it is to your health. Maybe if they did that on a regular basis and let all the kids . . . everybody see it. And do it on a continual basis that they would see that you know, this, this is, you know, it's nothing to joke about, that it is deadly.

As for alternative or additional consequences, parents recommended that individuals who are distributing these products be fined for selling to underage youth. There was consensus that if distributors were punished and abided by the laws regarding e-cigarette use, then youth would have a harder time obtaining the products. Parents hoped that the lack of accessibility would decrease use among youth:

Heftier fines for places that are caught selling to people that are under 18 and not IDing. Because once they find this place that does that, they will always come back, or this person. It might not be everybody that works there.

In addition, parents explained the need to ensure consistency between the consequences given at school with consequences at home. Supplementing repercussions in this way would require

parental engagement and also place the onus on the parent to reinforce behavior change in their children outside of the program responses:

Mathew really got a lot of consequences on this. His driving privileges were revoked. He spent a month on restriction. No electronics whatsoever. "If you are awake, make sure you have the band on your braces on and pick up a book." He had to work on the property to pay back the money that it cost for this class and the \$30.00 fine.

They reported that the consequences enforced at home by guardians were mostly geared toward monitoring and controlling their child's behavior more closely to decrease their opportunities for participating in the behaviors they got in trouble for in the first place. This included taking away transportation freedom, taking away money/allowance privileges, and regulating their communication with peers:

See my son used to ride his bike to school and everything. That's another thing I took away. I take him to school, he got to take the bus home, but at the same time I talked to him about everything.

What I did was he still grounded since this happened and pretty much what I did on my part is the phone comes to me when he's out of school. So, when I come to the house and my wife comes to the house, his phone gets turned down. He doesn't get it to the next morning when he goes to school. That way we can track him off the phone, see where he's out all the time.

Discussion

The primary objective of this study was to explore stakeholder's perspectives regarding the effectiveness of YTAC to mitigate adolescent e-cigarette use. Stakeholder knowledge, attitudes, and experiences with YTAC contributed to a deeper understanding of the facilitators and barriers that influence this program's efficacy. Through an analysis of the four main themes, this study determined a shared prioritization of the issue at hand, inconsistencies in the process of the program, identification of various factors contributing to e-cigarette use, and several recommendations for improvements to the intervention.

First, program stakeholders and parents all agreed that the prevalence of adolescent e-cigarette use was persistent and concerning, warranting a systematic intervention such as YTAC. With a shared agenda established across both groups of stakeholders, they also identified several facilitators of e-cigarette use that should be considered during interventions for cessation or prevention. Namely, and consistent with existing literature on the topic, perceived facilitators of use consisted of social norms and peer pressure along with a sense (due to marketing schemes and popularity of the products) that e-cigarettes are innocuous.

In addition, the finding that the procedures and operations were so discordantly understood between all stakeholders revealed the importance of clear processes and messaging. As it stands, the miscommunication and inconsistencies in repercussions caused frustration at least and non-compliance at most, contributing to a perceived lack of efficacy of the program. There was a disconnect between what program facilitators intended as the implementation process and what parents were experiencing. For parents, the burdens associated with the course and citation process sometimes caused them to be disengaged or to not take their child's e-cigarette use seriously. This lack of buy-in from parents might negatively affect the effectiveness of the course. Enhancing parental engagement and influence may be achieved by minimizing logistical barriers to the YTAC course and tailoring the program to align with parents' beliefs and even parenting styles.

Ultimately, while most program stakeholders regarded the program positively, they also acknowledged changes and supplements that would improve its functionality and success.

Table 1. Prevalence of Themes Among Key Stakeholder Interviews and Parent Focus Groups.

Themes	Key stakeholder interviews	Parent focus groups
Perceptions of the problem (79)	29.1% (23)	70.9% (56)
Facilitators of use (83)	25.3% (21)	74.7% (62)
Process and procedures (136)	13.2% (18)	86.8% (118)
Recommendations and improvements (103)	49.5 (51)	50.5 (52)

Parents also saw the benefits of the program but their remarks were consistently more critical than program stakeholders, with concerns stemming most commonly from inconsistent processes and lack of clear communication. In addition, parents were concerned that the punishments incurred for their children's e-cigarette use were sometimes arbitrary and even detrimental to their future and education (i.e., out-of-school suspension and criminal justice involvement). Along these same lines, both groups of stakeholders concurred that repercussions and education should be geared more distinctly toward the detriments of e-cigarette use on adolescent's long-term health. By streamlining communication to improve the clarity and consistency of the program as well as ensuring that the education and external consequences are directly relevant to the offense, this program may be more positively perceived and better utilized. Furthermore, by aligning the intervention more closely with evidence-based solutions that leverage parental influence and behavior change specific to substance use for this population, future iterations of youth e-cigarette mitigation efforts may be more successful.

Recommendations Based on Findings and Existing Literature

Parental influence. Parents have been recognized as essential to substance use prevention efforts since the 1990s (Pentz et al., 1989). Schwartz et al. (1997) explain how schools can support parents and encourage them to take a leadership role by creating positive family experiences. By encouraging family closeness and support, youth are less inclined to engage in dysfunctional behavior. This still holds true 20 years later as Eslami-Shahrabaki and Iranpour (2016) note that the child and home environment are a reciprocal relationship in which the parent's behavior impacts the child and the child's behavior impacts the parent's quality of life (Eslami-Shahrabaki & Iranpour, 2016).

Specific to youth substance use behaviors, literature shows that strong positive influences from family members are associated with increased youth resilience, prevention of onset of youth substance use, and youth engagement in addiction treatment (University of Washington Alcohol and Drug Abuse Institute, 2019). Both parental substance use and parenting styles are program predictors of adolescent substance use (Valente et al., 2019). In addition, communication between parent and child is a program part of developing connectedness; therefore, parental education on how and when to address substance use issues can be instrumental in prevention efforts (Carver et al., 2017; Kuntsche & Kuntsche, 2016). This emphasizes the need to consider and understand parental needs when developing and implementing programs geared toward youth substance use prevention.

Tailoring the intervention. Although researchers tend to agree that the evidence is not yet strong enough to definitively indicate whether interventions that are effective for adults can also help adolescents to quit, findings are most promising for group-based behavioral interventions (Fانشawe et al., 2017). In one meta-analysis, focused on studies of behavioral interventions for adolescent smoking cessation, they concluded that although young adults tend to underutilize the

available evidence-based treatments, these treatments should be as effective for young people as they are for the general adult population. The authors recommended focusing on motivation for adolescent help-seeking behavior to increase their utilization of clinically effective options (Suls et al., 2012). Specific studies in this area have found positive results for behavioral interventions that leverage contingency management, cognitive-behavioral therapy, self-efficacy, and stages of change (Engels et al., 1998; Ham, 2007; Krishnan-Sarin et al., 2006). One study focused on branded-messaging to support anti-tobacco interventions found that messaging for high-risk adolescents should encourage fun experiences; resonate with their interests, values, and aesthetics; and use subtle, nonjudgmental messaging (Toledo et al., 2020). These extant findings emphasize a need to rely not just on interventions based on education and negative consequences. Instead, it is important to tailor the program to address specific needs and risks of this population (i.e., social pressure, popular beliefs that e-cigarettes are innocuous, blatant marketing schemes) and to also offer positive feedback for behavior change.

Student engagement. In many addiction and wellness settings, behavior change interventions that are tailored and leverage empathy, partnership, support for autonomy, and nonjudgment have yielded better results than those that take a directive or purely educational approach (Chaitoff et al., 2017; Del Canale et al., 2012; Matalon, 2008; Roter et al., 1997; Smith et al., 2011). With consideration to this body of evidence, e-cigarette and vaping prevention interventions might be well suited to integrate these components into their strategies for changing adolescent behavior. Specifically, future iterations of YTAC might utilize the evidence from behavior change science to transition from a more punitive approach consisting mainly of education and consequences to one that leverages student (and parental) engagement and induces motivation for tobacco prevention and cessation in an autonomous and collaborative way.

Improved communication. Effective communication is a major determinant of successful intervention implementation. The Substance Abuse and Mental Health Services Administration (SAMHSA) discusses how to plan and implement evidence-based prevention interventions to address substance-related issues and highlights the numerous ways to ensure effective communication (SAMHSA, 2019). This includes electronic communications, written materials, charts, meetings, question and answer sessions, and a suggestion box. Without feedback from youth and parents, it is impossible to measure the effectiveness of a program. Focus group findings indicated that a written communication such as a pamphlet that outlines the next steps post-citation would be critical in reducing the confusion and lack of trust other parents have experienced. Overall, it is evident that communication is essential not only between parents and youth, but also between program facilitators and parents.

Limitations

The main objective of this study was to assess the perceived effectiveness of the YTAC program from both the parents' and stakeholders' point of view. However, this may not be indicative of the actual effectiveness of the program in terms of likelihood of reoffending tobacco or e-cigarette products. Further longitudinal research is needed to address whether students who participate are more or less likely to reoffend after receiving their first citation and attending this course. Furthermore, issues with external validity exist as a convenience sample was used for this study. All parents who were present prior to the class were asked to participate, but not all agreed. Therefore, the parents who agreed to participate may have differing perspectives, attitudes, and biases than those who chose not to participate, which could possibly have skewed our results.

Another key limitation when exploring the knowledge, attitudes, and experiences of this program was the lack of student interviews. Due to logistical constraints, we were unable to include student perspectives in this study. However, future studies should consider interviewing student participants on their perception and attitudes of both the YTAC program in general and e-cigarette use specifically. By interviewing students, additional insights regarding program effectiveness would emerge and the program can then be adjusted to better meet the needs of this target population. In addition, interviews with the clerk of court and a current high school SRO were not obtained; future research should consider interviewing these stakeholders for further information regarding the citation process.

Conclusion

When developing and implementing a community-based program, it is essential to understand how each major stakeholder operates in the larger system. Obtaining the unique perspective of parents, which is typically not integrated into programs, allows for increased support and buy-in which has shown to improve outcomes among youth. There is a distinct need for synchronized communication with parents and efforts to enhance mutual understanding and coordinated responses to programmatic requirements to decrease logistical disconnect. A more streamlined and transparent process is needed to solve logistical concerns. Providing parents with consistent information about their child's citation and repercussion responsibilities would lead to less frustration and better adherence. Furthermore, the parental focus groups highlighted the need for parent-focused drug education (including vaping, alcohol, and drugs) and knowledge to reinforce what children learn about the harmful effects of drugs (NIDA, 2003). By providing parents with educational resources, they can be better prepared and well versed in how to address their child's exposure and use of drug products such as e-cigarettes. With the e-cigarette industry rapidly evolving, there is a distinct need to ensure parents are included in the education process.

Through this study, the need for evidence-based evaluation processes and additional ongoing measures to accurately assess the effectiveness and acceptability of programs like YTAC were made evident. There is a clear need for formal data collection and analysis regarding student information and demographic variables such as age, gender, number of offenses, and school attended. As with any education-based course, the intention and overall objective of the intervention is to improve knowledge and behavior outcomes of the target population. However, implementation is not enough; thorough evaluation is necessary to understand the ways in which a program may or may not be efficiently and effectively reaching its desired goals and utilizing its resources. Ideally, a program will account for the specific cultural norms, perceptions, and behaviors of the population it serves, which requires flexibility, adaptability, and awareness.

All stakeholders have the same goal in mind: to reduce youth substance use and to promote their well-being. However, in response to youth substance use in general and e-cigarette use specifically, parents, schools, and the criminal justice system have taken varied approaches to achieving this shared agenda. The lack of consistency between these influential stakeholders has divided them rather than united them, perhaps to the detriment of the youth they are looking to serve. In the future, establishing not only mutual goals but also mutual and transparent approaches for achieving these goals would lead to more consistent messaging and improved outcomes.

Appendix I**Codebook**

Name	Definition
<i>Theme: Perceptions of the problem</i>	
Age of legalization for substance	Any mention of the legal age for drinking/smoking/drug use
Strong opposition to youth substance use	Voices strong feelings around the use of tobacco and other drugs
Downplaying e-cigarette use	As compared to other substances/behavioral issues e-cigarette use is a less serious offense
Parent involvement is negative	Parent feels their role and responsibility was inappropriate or misaligned
Parent involvement is positive	Parent feels their role and responsibility was appropriate
Concern for e-cigarette use	Concerns for the repercussions, prevalence, and health outcomes resulting from e-cigarette use
Healthy coping	Discussions of healthy coping strategies and ways to mitigate substance use
Unhealthy coping	Substance use or e-cigarette use was seen as an unhealthy way to cope
<i>Theme: Facilitators of use</i>	
Contributing factors: peer pressure	—
Contributing factors: easy access	—
Contributing factors: low cost	—
Contributing factors: trendy/popular	—
Contributing factors: other	Example: marketing, targeted to youth, attractive flavors/packaging
Parent's tobacco use	Mention of parent's personal tobacco use
Family trauma	Any abuse, violence, etc. mentioned
Behavior of siblings	Any discussion of sibling behavior/issues
Perception of parental involvement	Stakeholders' perception of the parental role in youth drug-usage
History of past offense	—
No history of past offense	—
Age of offenders	—
<i>Theme: Process and procedures</i>	
Misinformation	They were told wrong information
Not informed	Were NOT engaged in preparation for the process of resolution
Informed	Were engaged in preparation for the process of resolution
Positive interactions with program logistics	—
Negative interactions with program logistics	—
Positive interactions with program facilitators	Facilitators include school staff, SRO, judge, course instructors, etc.
Perception of citation process	How key stakeholders perceive the citation process
Negative interactions with program facilitators	Facilitators include school staff, SRO, judge, course instructors, etc.
Consequences enforced by school	Type of consequence/punishment
Consequences enforced by guardian	Type of consequence/punishment
Consequences enforced by judicial system	Type of consequence/punishment

(continued)

Appendix I (continued)

Codebook

Name	Definition
Inconsistency of consequences	The consequence/punishment was NOT the same between cases
Consequence was fair/appropriate	Punishment matched the crime
Consequence was unfair/inappropriate	Punishment did not match the crime
In-school suspension (+)	—
In-school suspension (−)	—
Out-of-school suspension (+)	—
Out-of-school suspension (−)	—
<i>Theme: Recommendations and improvements</i>	
Parental education	What have they done to educate themselves or receive information
Student education	What have they done to educate themselves or receive information
Lack of knowledge/understanding	Not knowing about products, trends, technology, etc. regarding substance use
Class is/was helpful	Expectations that the class will be beneficial or reporting that their experience in the past was helpful
Class is/was unhelpful	Expectations that the class will NOT be beneficial or reporting that their experience in the past was NOT helpful.
Recommendation: consequence alternatives	Ideas for improved consequences
Recommendation: youth/student education	What SHOULD be done in the future to inform parents. What they need/want moving forward
Recommendation: parental education	What SHOULD be done in the future to inform parents. What they need/want moving forward
Recommendation: other	—
Other anti-drug programs	Other anti-drug programs outside of YTAC
History of YTAC	Changes made throughout the implementation of YTAC
YTAC content	Content provided within YTAC
YTAC size	Class size of YTAC

Note. SRO = school resource officer; YTAC = Youth Tobacco Awareness Course.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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Thomas Koza, BA, is a recent graduate from Lewis University with a degree in Psychology. He was a Louis de la Parte Florida Mental Health Institute’s Summer Research Institute scholar at the University of South Florida where he completed this project evaluating a local youth tobacco awareness course.

Amanda Sharp, PhD, is a member of the Motivational Interviewing Network of Trainers (MINT), with extensive experience with interventions based on motivational interviewing. Her research is focused on person-centered behavior change and communication techniques as a means for incorporating individual worldviews into the operations, culture, and policies of behavioral health delivery systems.

Kathleen Moore is a research professor in Department of Mental Health Law and Policy and executive director of the Florida Mental Health Institute within the College of Behavioral and Community Sciences. For the past 20 years, she has collaborated with community-based agencies with a focus on program evaluation, bridging the gap between research and practice.