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Reducing Middle and High School Student Vaping in Adams County

Public Health 780: Evidence-Based Decision-Making
University of Wisconsin-Madison



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Reducing Middle and High School Student Vaping in Adams County

South Central Wisconsin Tobacco Coalition

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Summary Statement

Adams County has expressed concern with increasing vaping/E-cigarette use in middle and high school students. This proposal outlines a project which aims to lower the prevalence of vaping in Adams County teens. It will provide schools with educational tools on vaping, improve students and families' knowledge of the dangers of vaping, and provide the community of Adams County with strategies to help deter teens from vaping, with the aim to protect the health of Adams County youth.

Note: "Vaping" and "E-cigarettes" are used interchangeably in the literature. For this paper, we will be using the term "vaping" to keep the nomenclature consistent.

Public Health Issue

Based on data from the South Central Wisconsin Tobacco Coalition and the Youth Risk Behavior Survey (YRBS), vaping culture is very common and increasing among middle and high school students in Adams County. Our project will focus on addressing the culture of teen vaping in Adams County by improving knowledge of health risks and reducing vaping among Adams County middle and high school students. Our project will provide three proven evidence-based strategies to help reduce teen vaping in Adams County in order to improve the overall health and quality of life of Adams County residents.

The use of vaping products is unsafe for kids, teens, and young adults due to the fact that most vaping products contain nicotine (CDC, 2020). Nicotine is a highly addictive substance and can harm adolescent brain development, which continues into the early to mid-20s. Beyond nicotine, vaping products can contain other harmful substances that can pose a threat to the development of young people (CDC, 2020). Recent research has found that the use of vaping products in youth has led to hospitalizations for lung injury in the state of Wisconsin and throughout the United States (Layden et al., 2020). In addition to the health related risks that vaping products alone cause, young people who vape may be more likely to take up smoking cigarettes in the future (CDC, 2020). Vaping is a relatively new phenomenon and the long-term risks have yet to be exposed, but the present data on the impact vaping has on health is alarming.

The state of Wisconsin began asking middle school students about vaping in 2019, via the Youth Risk Behavior Survey (YRBS). In Adams County, 13% of middle school students reported using vaping products in the past 30 days (Figure 1) (Youth Risk Behavior Survey, 2019). The state began asking high school students about vaping in 2017 via the YRBS. In Adams County, 21% of high school students reported using vaping products in the past 30 days (Figure 2) and 47% reported that they had tried vaping during their lifetime.

In the state of Wisconsin, use of vaping devices has recently gone up sharply. Current vaping rates among Wisconsin high school students increased 154% between 2014 and 2018 (Wisconsin Department of Health Services, 2019). Forty-five percent of high school students have tried vaping and 1 in 5 (20.6%) high school students reported vaping in the last 30 days (Youth Risk Behavior Survey, 2019). Nationally, 32.7% of high schools reported vaping in the last 30 days and 50.1% of high schools students have tried vaping at some point (Youth Risk Behavior

Survey, 2019). There has been an increase in the use of vaping products at the state and national level in the past few years and this trend is developing in Adams County as well.

Figure 1: Percent of Middle School Students in Adams County that reported using vaping products in the past 30 days

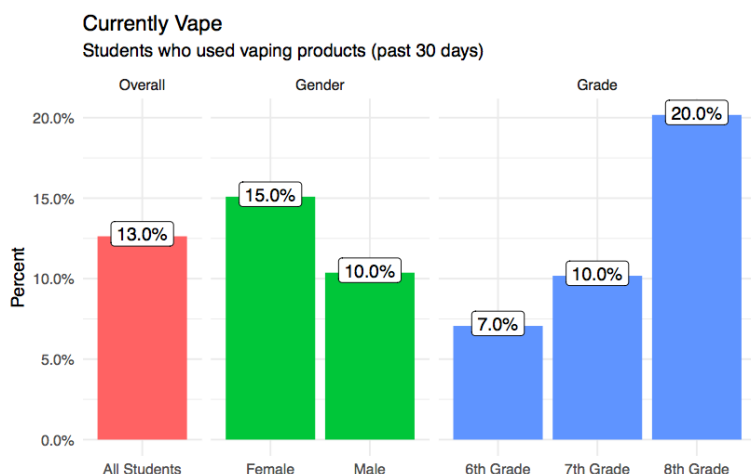
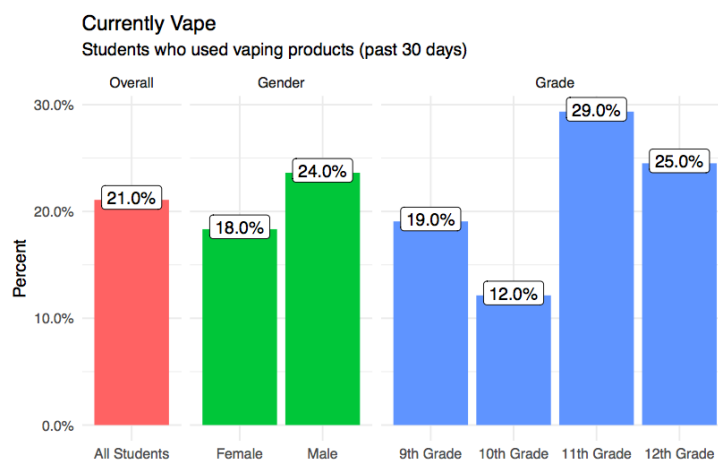


Figure 2: Percent of High School Students in Adams County that reported using vaping products in the past 30 days



Evidence-based Policy Review

As vaping continues to become popular within youth and the dangers of vaping continues to be supported by literature, there is a need for policies to help prevent teen vaping. We recommend the following three evidence-based approaches to address vaping in middle and high school students in Adams County:

1. School-based Intervention: CATCH My Breath and smokeSCREEN
2. Media-based Intervention: Vanish the Vape
3. Advertisement and Promotion Restriction Policy

School-based Intervention (CATCH My Breath and smokeSCREEN)

The school-based intervention revolves around two evidence-based programs; CATCH My Breath and smokeSCREEN. Combining CATCH My Breath and smokeSCREEN in a holistic intervention aimed at reducing vaping in Adams County youth has the potential to provide additive and lasting effects on this growing issue.

CATCH My Breath is a youth vaping prevention curriculum created in collaboration with researchers at the Michael & Susan Dell Center for Healthy Living at the University of Texas Health Science Center at Houston School of Public Health (Stone K., 2020). The curriculum of the CATCH My Breath program is composed of four Powerpoint lessons, providing about 30

minutes each of instruction. Targeting students in grades 5-12, there are different lesson plans, in-class activities, online resources, and take home material depending on the age of the target audience. The content includes information about vaping, including the potential harms, adverse side effects, techniques to develop refusal skills, and the understanding of marketing strategies aimed at youth. Educators utilizing this free material can take an hour long training module to help prepare them to deliver the content.

A pilot study on the CATCH My Breath curriculum collected data from 26 schools across five states, and included 2,255 students in grades 6-8 (Kelder et al., 2020). Eighty-six percent of students reported that they knew more about vaping and were less likely to vape after completing the program. Over 80% of students stated they would view vaping ads differently and 7 out of 10 students said that they discussed what they learned with family or friends. Ninety-one percent of teachers agreed or strongly agreed that they were confident in their ability to teach the CATCH My Breath curriculum, and that it was culturally appropriate for their students (Kelder et al., 2020). These results show that CATCH My Breath has the potential to reduce vaping initiation and increase the dialogue around vaping in Adams County.

SmokeSCREEN is a vaping and smoking prevention video game, developed by Yale University's Center for Health and Learning. The game focuses on peer pressure and decision making (SmokeSCREEN, n.d.). This free, online game takes about four hours to complete, and targets students ages 10-16. SmokeSCREEN aims to prevent vaping by challenging users to work through simulated real-life situations and dangers that can occur when youth vape. These are skills that participants can apply in their real life to avoid vaping initiation. In the video game, the player creates a virtual character who engages in conversations, difficult situations, and events in a school setting.

The short-term evaluation data of a population of 10-16 year olds enrolled in after-school programs suggests that the smokeSCREEN video game helps avoid risky behaviors that lead to youth engaging in vaping (Hieftje et al., 2019). The study by Hieftje et al. showed significant differences in the proportion of correct knowledge-based questions regarding vaping and an increase in beliefs and attitudes against vaping after playing the smokeSCREEN video game. These findings suggest that smokeSCREEN is a promising intervention to prevent vaping in youth.

These two programs can be combined to provide schools with a comprehensive education strategy to impart students with knowledge in order to prevent vaping. Overall, this school-based intervention aims to reduce vaping in Adams County middle and high school students through curriculum and interactive content to provide students relevant and direct information regarding vaping. These interventions will improve the community health in Adams County by reducing the rate of new vape users, which will lead to improved quality of life for residents by reducing the rate of vaping dependence in the county.

The implementation of these two programs would require South Central Wisconsin Tobacco Coalition to partner with the Adams County School District. Adams County School District staff will also need to partner with the free CATCH My Breath programming and smokeSCREEN content to be prepared to engage their students. This will require staff to be motivated and have

the curriculum time to incorporate vaping content in their teaching. This school-based intervention will also need to be discussed in the Adams County School District regarding which grades will receive this education.

The impact on the target population of middle and high school students in Adams County will be the reduction of vaping. The impact will reach families, peer groups, and spread throughout the school system of Adams County. The students will also increase their knowledge on the harmful effects of vaping and increase the rate of students who already vape to seek help to reduce or quit their vaping habits. Given this intervention would be based within Adams County schools, these impacts would reach across racial, geographical, economical, and cultural divides. The goal would be for this intervention to reach all corners of Adams County through the county's students. Middle and high school students are disproportionately affected by vaping, so specifically targeting youth hopefully reduces the burden of vaping and vaping-associated illness in the years to come as this population grows.

With the results of future Youth Risk Behavior Surveys, South Central Wisconsin Tobacco Coalition and Adams County School District will be able to evaluate the success of these programs. Through subjective measures, like teacher's evaluations on the effectiveness of these interventions, along with the frequency of vaping-related infractions at school and with local law enforcement, qualitative and real-time measurements on the success of these interventions can be determined.

Resources include the online material for CATCH My Breath (available at: <https://catchinfo.org/modules/e-cigarettes/>) and the smokeSCREEN video game, which can be downloaded for free from the App Store and Google Play. Other resources include the time to deliver this material to students and the staff members who will be implementing this material. Both CATCH My Breath and smokeSCREEN are free for school districts.

Media-based Intervention: Vanish the Vape

Vanish the Vape -a student led anti-vaping media campaign- was first implemented in September 2018 by Tempe Union High School, in Tempe, Arizona. The intent was to address the high level of vaping by students and reduce the disciplinary incidents of vaping on campus. The campaign's aim was to educate students and families about the consequences and dangers of vaping using presentations, posters, social media, and videos. The campaign included handing out flyers at school, providing handouts for parents, use of videos, educational materials, websites, paid advertisements in local newspapers, and developing social media campaign content on Facebook, Instagram, and Twitter. Another effective method utilized was the peer-to-peer sensitization. High schoolers tend to look up to those peers viewed as role models. This further reinforces the importance of students taking active roles in the implementation of this program

For program implementation in Adams County schools, the South Central Wisconsin Tobacco Coalition can use existing funding to help produce flyers that can be distributed within its schools and the community. This could be funded through the Student AODA Mini-Grant

Program. The funds- up to a maximum of \$1,000- are available on a competitive basis for schools throughout the state to support education, prevention, and intervention programs. The priority of the mini-grant is the involvement of youths in the planning and implementation of the project which seems to fit with the Vanish the Vape program.

Adams County can form a partnership with the South Central Tobacco Coalition. Students can help with designing and distributing flyers to the parents and community members. Students and families can access online resources about vaping and free Vanish The Vape PSAs that were made by Tempe high school students via their website (High School Health & Wellness Program / Teen Vaping, 2018). Students in Adams County can create their own PSAs about vaping in order to both increase education and allow students to play a role in keeping their school community healthy. South Central Wisconsin Tobacco Coalition can provide guidance to students and provide logistical support to distribute flyers and create social media campaigns geared towards students.

The program will hopefully have an impact on Adams county students by providing them with knowledge about the dangers and consequences of vaping. Since many high schoolers are unaware of the consequences of vaping on health, this intervention will provide them with the knowledge, which will eventually lead to the reduction of vaping. According to data collected by Tempe union high school, there has been 30% reduction in vaping related disciplinary incidents between September and December 2018 (O'Connor, 2019). Additionally, this intervention could have a possible impact on health equity because Adams county students, parents and community members will have access to health information.

Future results of Youth Risk Behavior Surveys and the frequency of vaping-related infractions in school can provide South Central Wisconsin Tobacco Coalition and Adams County School District data that can be used to evaluate the success of the media campaign.

Advertisement and Promotion Restriction Policy

This intervention focuses on requiring stores in Adams County to limit the amount of advertisements on store windows or in parking lots in order to decrease teen use of vape products. In the United States, federal law allows the advertising and promotion of vaping products, but counties can pass ordinances about advertisements that impact public safety and overall quality of the area. Although advertisements of vaping products would still be allowed, the overall amount of advertising would be decreased. The County Board of Adams County could consider passing ordinances that require store windows to have a percentage of empty space in order for safety. The primary reason being that law enforcement should be able to see inside during an emergency.

The County Board can also consider passing ordinances that require store windows or parking lots to be aesthetically pleasing in order to represent the county well. An excessive quantity of advertisements may lower the overall quality of the local area and be unpleasant to viewers. The local government can then limit the amount of advertising that can be displayed on windows or

in parking lots. These ordinances allow for the county to be safer and aesthetically pleasing, while also limiting the amount of vaping advertisements that are displayed to children.

There is no current evidence of the effects of restrictions on advertising and promotion of vape products, since it is a relatively new product. Restrictions would likely have similar effects to restrictions on tobacco advertising and promotion (O'Connor, 2019). There is evidence on how vape product advertising impacts youth perception of vaping. U.S. high school students who perceived vaping as causing a lot of harm had lower odds of both openness and curiosity about vaping compared to those with lower harm perception (Margolis et al., 2018). Respondents who reported high exposure to vaping advertising in stores had greater odds of being open to vaping and were highly curious about vaping compared to those not highly exposed (Margolis et al., 2018). These findings demonstrate that students exposed to vaping advertising are more open and curious to use vaping products than students that were not exposed to the advertising. Longitudinal examinations have demonstrated that exposure to vaping advertising among youth who had never used vaping products increased the likelihood of subsequent vaping initiation (Camenga et al., 2018). Exposure to any vaping advertising may play a role in teens' decision to initiate vaping and eventually tobacco cigarette use (Padon et al., 2018). These results display the intense role advertisements play on youth's decision to begin taking up vaping and provide further reasoning for limiting the amount of exposure youth receive of these types of advertisements.

In order to establish this evidence-based policy, South Central Wisconsin Tobacco Coalition must partner with county board supervisors to pass ordinances in order to limit the amount of advertising that can be seen in convenience stores. Respected representatives from the area are needed to support the measures. This includes policy makers, local law enforcement, business leaders, and elected officials. Public support is also needed to encourage officials to pass ordinances. Implementation of restriction on advertising and promotion of vaping requires that South Central Wisconsin Tobacco Coalition must get local officials to pass advertising ordinances that would limit the amount of advertising that could be placed on windows for safety and/or aesthetic reasons. This would allow for there to be less advertisement of vape products that would be displayed for youth to see.

The target population of Adams County middle and high school students would be impacted by having a lower amount of vaping advertisements presented to them in convenience stores. The lower amounts of advertisements would result in a decreased use of vaping products in the youth population and lower the perception of vaping being an acceptable activity. This intervention will be able to have an effect on health disparities and health equity within Adams County. Restricting advertising and promotion of vaping products will allow steps to be taken to protect the health of the community of Adams County. Adams County is an area that has a history of a culture of tobacco and vaping and by putting in resources to help stop this dangerous activity, the health of all citizens will be protected. Adams County also has limited public health resources, which is why this intervention's focus on prevention of vaping is highly important. This policy will be able to prevent citizens from becoming addicted to vaping and potentially result in a healthier county.

The policy can be evaluated through future Youth Risk Behavior Survey results. This will allow the South Central Wisconsin Tobacco Coalition to determine if the amount of youth using vaping products in Adams County has decreased due to the implementation of this intervention. The resources needed for this intervention include existing infrastructure of South Central Wisconsin Tobacco Coalition and communication with elected officials, the public, local law enforcement, business owners. There will also need to be personnel that can attend local government meetings, help write and pass ordinances, speak with elected officials, law enforcement, business owners, and the community as a whole. The project can be funded through existing infrastructure of South Central Wisconsin Tobacco Coalition.

Conclusion

Vaping is increasing in middle and high school students in Adams County, the state of Wisconsin, and across the country. There are many known and unknown dangers of vaping that will impact the health of Adams County children. Often middle and high school students do not know about these dangers or the consequences of vaping. Evidence-based policies for reduction in vaping need to be implemented in Adams County in order to protect the health of both students and the community. The three evidence-based policies presented will allow Adams County to decrease the amount of middle and high school students that use vape products, therefore improving the health of the county and protecting future generations.

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Logic Model

Program/Policy (focus of intervention): Catch my Breath Youth Intervention for ECig Prevention in Middle and High School Students Logic Model

Intended Audience: South Central Wisconsin Tobacco Coalition

Scope of intervention: Primary Prevention

<u>Inputs</u>	Outputs		Impact - Outcome		
	Activities	Audience(s)	Shorter/intermediate	Long	Goal
<u>RESOURCES AVAILABLE:</u> South Central Wisconsin Tobacco Coalition Adams County School District Catch my Breath training material <u>RESOURCES NEEDED:</u> Partnership with school Staff Time and space	<u>Individual Level</u> Implement intervention in school Train staff <u>Interpersonal/social Level</u> Motivate Staff Engage Students <u>Gov't/Organization al Level</u> Partner with school districts	<u>Individual Level</u> 5th- 12th grade students <u>Interpersonal/social Level</u> Families Peer groups School systems <u>Gov't/Organization al Level</u> South Central Wisconsin Tobacco Coalition School system	<u>Individual Level</u> Motivation to quit E-cigarette usage Retained knowledge of e-cigarette harms <u>Gov't/Organizational Level</u> Catch my Breath program implemented in school	<u>Individual Level</u> By 2025, E-cig use will decrease by 10% <u>Interpersonal/social Level</u> Lower use of ECigs being used in schools Adams County families will adopt anti-smoking messages to improve health outcomes <u>Gov't/Organizational Level</u> tool for e-cig education in school	Reduce E-cig use in Middle and HS students in Adams County The implementation of Catch my Breath will result in a decrease in E-cigarette uptake and use in Adams County

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