

# Quit JUULin' and Stay Schoolin': An Educational Intervention on Teen Literacy Regarding Electronic Cigarette Use



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## Introduction

The use of electronic cigarettes, specifically the JUUL, among high school students in the past few years has risen exponentially. According to a report by the Surgeon General, e-cigarette use has tripled among middle and high school students since 2011.<sup>1</sup> All JUUL pods, the refillable cartridges in the JUUL containing vaporizing fluid, contain high concentrations of nicotine, even more than their competitors.<sup>2</sup> The impacts of nicotine on a developing adolescent body has numerous harmful effects such as addiction and loss of interest in healthy activities. Other substances found in JUUL pods have been linked with reduced cell viability, proinflammatory responses, and impaired immune response.<sup>3,4</sup>

In response to rising concern of the prevalence of electronic cigarette and JUUL use among adolescents, LC 8, with the help of the Northern Kentucky Health Department, investigated the effectiveness of educational intervention to influence youth perceptions of the rise of electronic cigarette and JUUL use among adolescents is described in two high school populations in Northern Kentucky. The educational intervention used in this study may serve as a model for other public health efforts in raising awareness of potential risks and shifting perspectives of electronic cigarette and JUUL use among youth.

## Objectives

### Service

To influence youth perceptions of health risks associated with JUUL and electronic cigarette use and to educate about the effects of nicotine on the body.

### Learning

To determine if an educational intervention consisting of a presentation and small group session can influence youth perceptions on JUUL and electronic cigarette usage.

## Methods

Target population: Adolescent students (grades 6-12) in Northern Kentucky area

### LARGE GROUP SESSION (30 min)

Informational presentation

Time to answer questions

### SMALL GROUP SESSIONS (40 min)

Medical student to high school student ratio: 1:6.4

Discussion and activities for assessing opinions/expanding knowledge



Pictured: LC 8 members at Williamstown Independent Schools giving the informational presentation during the large group session

## Methods (cont.)

### Pre and Post Surveys (10 min ea.)

- Demographics (age, grade, gender)
- JUUL habits
- 5 questions assessing knowledge
- 5 questions assessing opinion
- In post-survey only: preference of large group vs. small group

### Survey Purpose

- Determine prevalence of Northern Kentucky students who use JUUL/e-cigarettes
- Determine whether there was a change in opinion of JUUL
- Determine if students' knowledge about JUULing changed after intervention
- Determine students' preferences for large vs. small group

## Results

### 345 total high school students

- 126 from Boone County
- 219 from Williamstown

### After our educational intervention:

- More students **agreed** that JUULs/e-cigarettes are **dangerous**, they are **easy** to get **addicted** to, and **flavored pods** make youth **more likely to use**.
- More students **disagreed** that JUULs/e-cigarettes are **safe**
- A **knowledge test** about the health risks of JUULs and e-cigs saw **increased scores**
- Preferences for group presentations and small group sessions **differed** between schools

## Conclusion

### Discussion

The beliefs and attitudes of students significantly changed to a more **anti-JUUL** state after the intervention, which shows that we were successful in meeting both service and learning objectives. Educational interventions with our format may serve as a mode for public health efforts in shifting youth perceptions of health risks associated with JUUL and e-cigarettes. This is among the first data collected on the impact of educational interventions on adolescent JUUL/e-cigarette use in Northern Kentucky, which makes this a stepping stone for future endeavors tackling similar issues.

### Limitations

- Social Desirability
- Reading Level of the Students vs. Vocabulary of the Survey
- Sample Bias
- No Control Group

### Future Directions

- Establish control groups
- Long-term follow up with students in intervention to see if opinions change over time
- Determine if there are any racial or gender-specific attitudes of JUUL use
- Apply interventional method to other issues in Northern Kentucky such as opioid crisis

## References and Acknowledgments

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