STOP The Cycle: The Impact of Vaping-related Layered Learning on Pharm.D. Students

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Background

- Vaping is growing problem amongst adolescents in the U.S. In 2018, CDC and FDA reported 3.6 million U.S. youth were past month e-cigarette users.
- Research suggests a correlation between acute lung illness and vaping, which raises concerns that adolescents may be undereducated on the dangers of vaping.
- In 2018, a S.T.O.P. (Students Teaching Other Peers) vaping education initiative was developed at SIUE School of Pharmacy to address vaping as a public health concern for 5th–12th grade students.
- In 2020, the collaborators decided to expand the program to provide education to Pharm.D. students on the topic and teach them how to educate youth in their communities.

Purpose

- To educate Pharm.D. students on a topic not often addressed in pharmacy school curriculum and provide them the tools to educate their local communities
- To ultimately heighten community awareness of dangers and consequences of this growing problem

Methods

- We collaborated with the Chestnut Health, SIUE's Health Services, the Meridian Society, SIUE SOP APhA-ASP's Operation Heart, and SIUE School of Pharmacy to develop and implement this program.
- The program was initially designed to be an in-person interactive session, but due to the COVID-19 pandemic online interactive modules were created instead.
- Six modules were developed:
  - Module 1: Defining the Landscape of Electronic Nicotine Devices (ENDs) over the years
  - Module 2: Understanding the components of the electronic nicotine delivery systems
  - Module 3: THC, marijuana, and CBD use in ENDs: A growing problem
  - Module 4: Addiction and health related consequences
  - Module 5: Become the agent of change: Advocating for healthy practices
  - Module 6: Resources in your community for solutions regarding vaping in the youth
- We received IRB approval in September 2020 (IRB protocol #899).
- Pre- and post-surveys were developed to assess students' confidence and knowledge on the the contents of ENDs and e-juice, addiction vs dependence, how nicotine impacts the body, and concerns regarding long-term health effects.

Results

- A total of 15 students started the modules and 7 students completed all modules and quizzes. Out of the 7 students who completed all modules 6 students completed both the pre- and post-questionnaire.

Table 1. Pre- and post- survey results questions 1 through 10

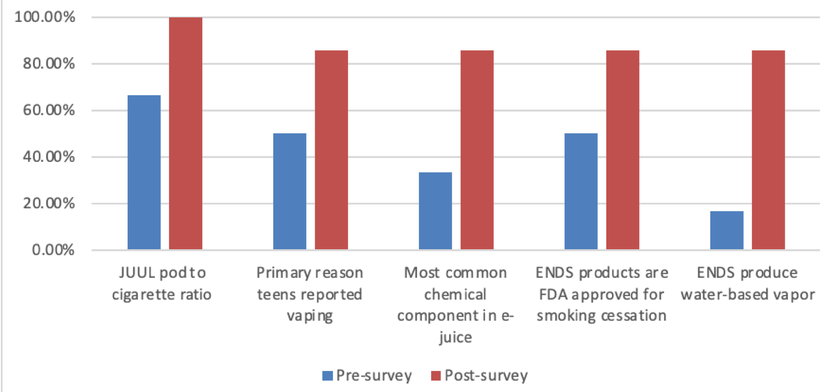
Key:
1 – I believe this statement to be true
2 – I believe this statement to be false
3 – I am unsure if this is true or false

	Pre-survey response (N=12)			Post-survey response (N=7)		
	1	2	3	1	2	3
1	11 (91.7%)	0 (0%)	1 (8.3%)	6 (85.7%)	1 (14.3%)	0 (0%)
2	0 (0%)	10 (83.3%)	2 (16.7%)	1 (14.3%)	5 (71.4%)	1 (14.3%)
3	8 (66.7%)	0 (0%)	4 (33.3%)	4 (57.1%)	3 (42.9%)	0 (0%)
4	10 (83.3%)	0 (0%)	2 (16.7%)	4 (57.2%)	1 (14.4%)	1 (14.4%)
5	2 (16.7%)	8 (66.6%)	2 (16.7%)	6 (85.7%)	1 (14.3%)	0 (0%)
6	11 (91.7%)	0 (0%)	1 (8.3%)	6 (85.7%)	0 (0%)	1 (14.3%)
7	11 (91.7%)	0 (0%)	1 (8.3%)	7 (100%)	0 (0%)	0 (0%)
8	9 (75%)	3 (25%)	0 (0%)	7 (100%)	0 (0%)	0 (0%)
9	5 (41.7%)	4 (33.3%)	3 (25%)	7 (100%)	0 (0%)	0 (0%)
10	5 (41.7%)	2 (16.6%)	5 (41.7%)	7 (100%)	0 (0%)	0 (0%)

Table 2. Pre- and post- survey results questions 11 through 20

Question	Pre-survey response (N=12)		Post-survey response (N=7)	
	Correct	Incorrect	Correct	Incorrect
11	8 (66.7%)	4 (33.3%)	7 (100%)	0 (0%)
12	5 (41.7%)	7 (58.3%)	4 (57.1%)	3 (42.9%)
13	4 (33.3%)	8 (66.7%)	6 (85.7%)	1 (14.3%)
14	8 (66.7%)	4 (33.3%)	3 (42.9%)	4 (57.1%)
15	6 (50%)	6 (50%)	6 (85.7%)	1 (14.3%)
16	6 (50%)	6 (50%)	6 (85.7%)	1 (14.3%)
17	10 (83.3%)	2 (16.7%)	6 (85.7%)	1 (14.3%)
18	10 (83.3%)	2 (16.7%)	6 (85.7%)	1 (14.3%)
19	12 (100%)	0 (0%)	6 (85.7%)	1 (14.3%)
20	2 (16.7%)	10 (83.3%)	6 (85.7%)	1 (14.3%)

Figure 1. Students' Correct Responses to Content Based Questions



Limitations

There were several limitations of the project. The inability to host a live presentation resulting in low enrollment being the biggest limitation. Due to the COVID-19 pandemic, modules were created as online videos rather than a more engaging in person session. Additionally, TechSmith Relay monitored if students played the whole video, but we could not monitor that they watched it. Due to the low enrollment, we had limited survey responses.

Conclusion

This program has the potential to greatly impact the community and future healthcare providers by increasing their knowledge on a subject not often discussed in pharmacy schools. In the pilot year, we saw positive results in students' confidence on knowledge of vaping. We believe this program can continue evolve as community needs change and as the information regarding the effects of vaping grows. Due to the limited sample size, it is not possible to to draw any definitive conclusions regarding the program's full impact.

In the future as the pandemic ends, ideally hosting an in-person session would increase enrollment and verify that students actively participate during the modules.

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