

The Impact of Technology-Based Interventions on Immunization Rates Among Generation Z College Students

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PROBLEM STATEMENT

The National Adult Immunization Plan created by the U.S. Department of Health and Human Services increased the infrastructure and accessibility of adult immunizations. However, these recommendations do not relate to the health needs of college students. Complexity is heightened the Generation Z, flood college campuses with unique expectations and beliefs towards vaccinations

- It is estimated that only 43% of American teens are up to date with the HPV vaccine and approximately 49% of HPV infections are among individuals that are 24 years old or younger
- The recent outbreak of hepatitis A in the U.S. makes it a relevant vaccination to introduce to certain populations within the university setting
- Ninety-eight of hepatitis A infections were acquired locally in Florida since January 2018. Most of these infections were related to unvaccinated individuals

PROJECT PURPOSE

The aim of this QI project was to evaluate the efficacy of web-based interventions versus educational booth outreach alone to increase HPV and/or hepatitis A vaccine uptake. Objectives included:

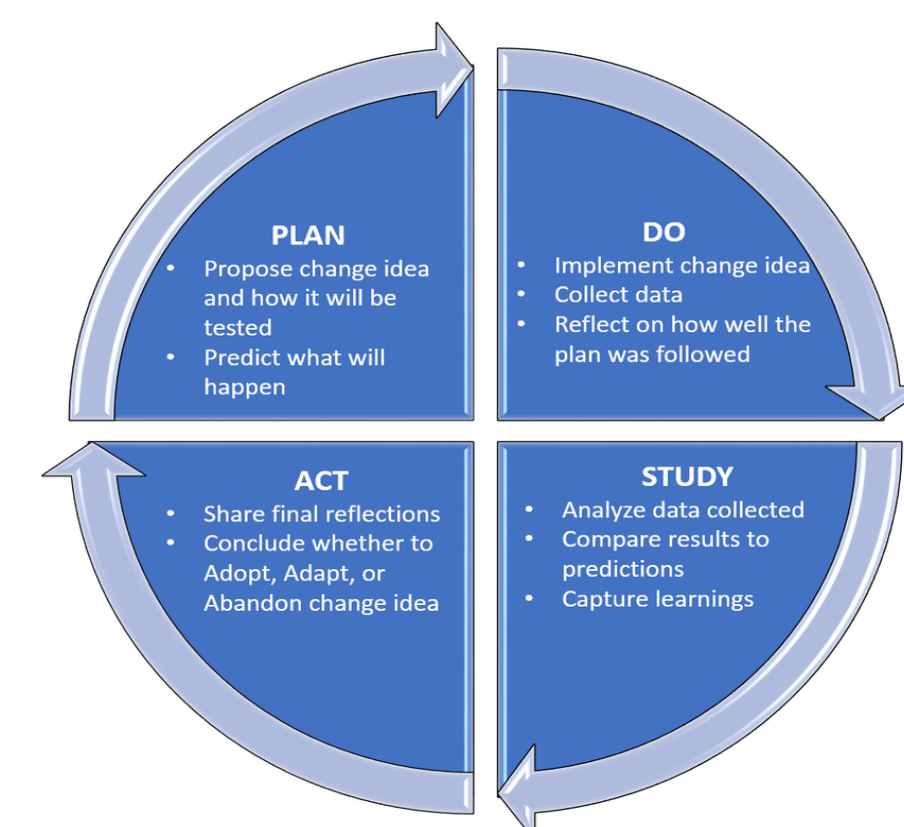
- Assessment of current QI processes for immunization events in order to optimize tracking, accountability, and sustainability
- Evaluation of the impact of technology-based process interventions on student participation rates with attention to Generation Z including:

- Marketing and educational outreach using web-based platforms
- Web-based appointment scheduling
- Transformation of educational information to infographic format

The PICOT question was designed to answer the following: At a large Metropolitan University, does a multi-prong technology-based intervention improve HPV and hepatitis A immunization rates during the month of the vaccination event in comparison to standard practice?

MODEL/NURSING THEORY

Institute for Healthcare Improvement Plan-Do-Study-Act
A quality Improvement (QI) tool to implement, evaluate, and refine changes



METHODS

Subjects

Students between the ages of 18 and 24 years old, spoke English, and did not have any contraindications to the immunization

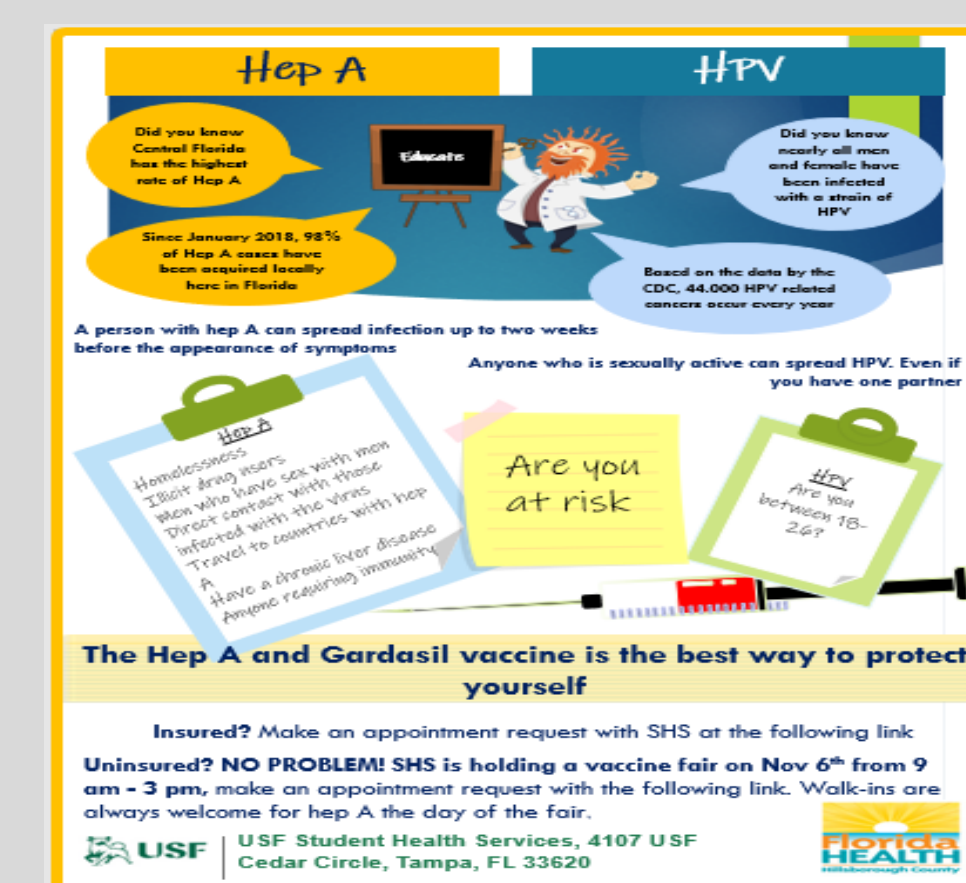
Setting

At a large metropolitan Florida university

Intervention

The QI project was implemented in partnership with SHS and the local DOH

- The current HPV educational information was merged with educational material on hepatitis A on the SHS website
- An online appointment form and link was created on the SHS website
- An infographic was created and disseminated via the University's student organization Facebook pages, outreach events, and the SHS university email



Link to online vaccination scheduling tool

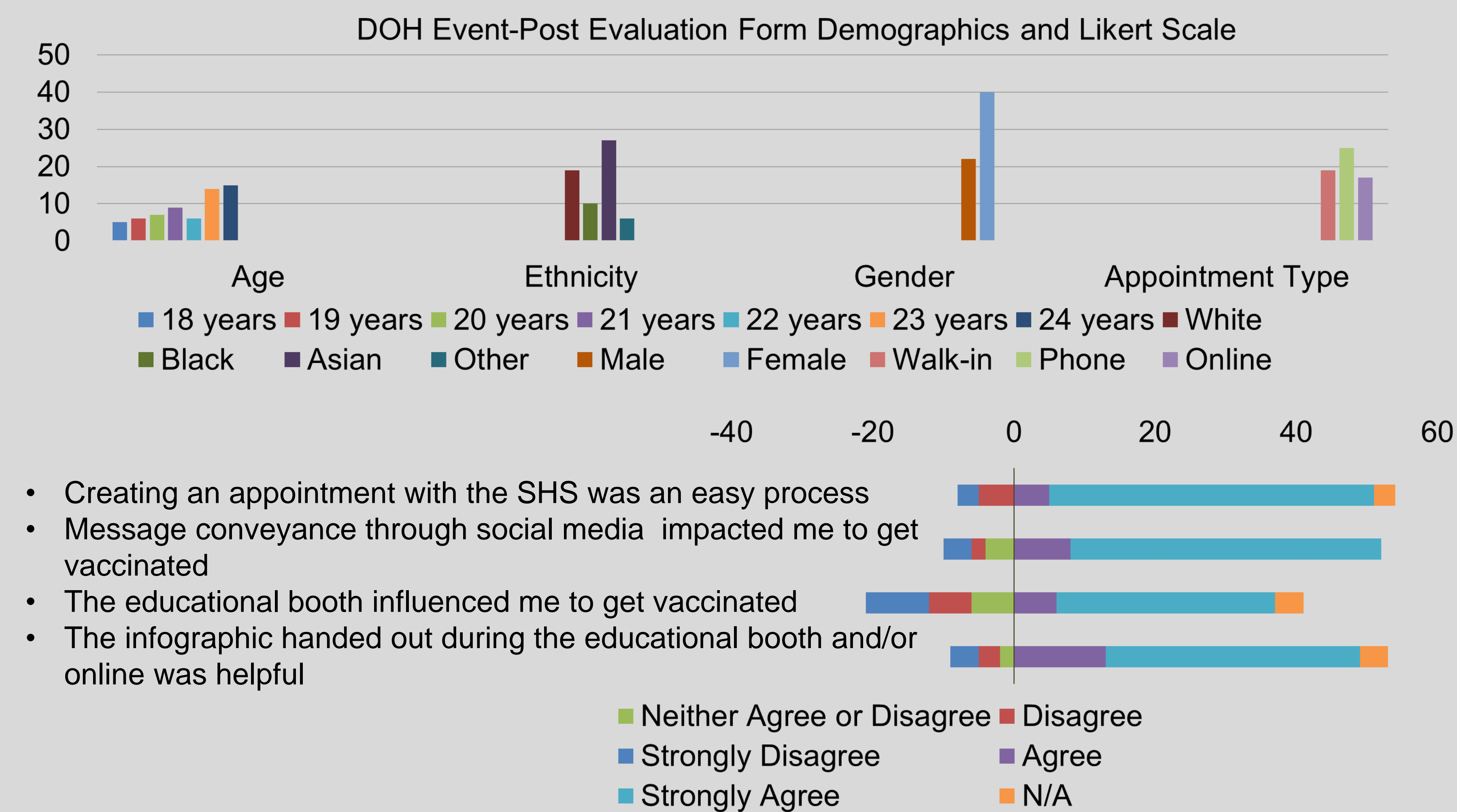
<https://www.otform.com/form/92874965215166>

Data Collection

- A post Vaccination Evaluation Form provided descriptive and qualitative data of the target population from the current DOH current event
- For comparison, HPV uptake and availability was collected from the previous DOH events
- Baseline data was collected for hepatitis A
- Post event SHS vaccine uptake was collected to evaluate sustainability and compared to the post event data from the previous DOH events

RESULTS

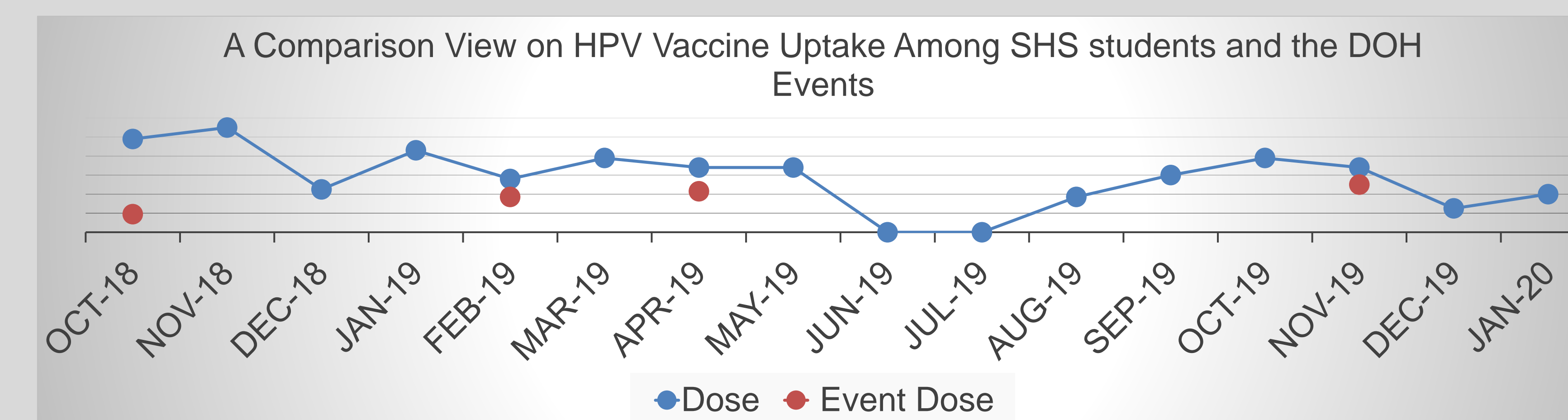
Event A, B, and C observed count (n = 99) was lower than the expected count (132). Similarly, during the post event, only 44 students (24.75%) were expected to be vaccinated: this was lower than the observed count of (n = 77). The Chi-squared test indicated the relationship between the current event and past events to be significant, $\chi^2 (1) = 56.8, P = \leq .05$ indicating technology to play a role in vaccine uptake



- Creating an appointment with the SHS was an easy process
- Message conveyance through social media impacted me to get vaccinated
- The educational booth influenced me to get vaccinated
- The infographic handed out during the educational booth and/or online was helpful

Participation increased with age. Surprisingly, most of the students who participated were Asian, despite the fact, 51% of the college is represented by Whites and only 6% by Asians

Online scheduling was slightly lower than traditional methods of walk-in and over the phone scheduling



The results of the pre-SHS vaccination count was compared to the post-six-week vaccine uptake at SHS using the independent two-tailed t-test. The pre-SHS months (n = 11) HPV vaccination was (M = 73.27, SD = 22.50) compared to 6 weeks following the DOH current event (n = 3). The results (M = 44.33, SD = 21.83) showed no significant difference in vaccine uptake post DOH vaccination event $t(1.98) = p = .08$

DISCUSSION

This project demonstrates how a multi-prong approach provides a method of obtaining both quantitative and qualitative data

Student recommendations still insisted more utilization of social media via (1) Facebook and (2) Instagram for message conveyance

Educational booths present the ability for the project coordinator to gain insight of the target population behavior, attitudes, and experiences which would otherwise be lost through online platforms

The students who participated at the DOH vaccination event were either uninsured or underinsured. For this reason, it is highly unlikely that any vaccination event had a positive influence on the SHS vaccine numbers post the DOH events

IMPLICATIONS FOR ADVANCED PRACTICE NURSING

- The project makes important contributions to the literature regarding HPV and hepatitis A uptake among minorities and international students
- Interventions are needed to educate uninsured students and international students regarding the availability of vaccines and the resources provided by the SHS
- Culturally targeted messaging may modify vaccine related beliefs and promote future event participation

SUSTAINABILITY

Findings suggest that disseminating material through social media and online scheduling appears to be a promising approach to increasing vaccine uptake. Further research is needed to assess the relationship between technology and vaccine uptake at the SHS. The findings from this project can be used to refine more effective measurements for college-based e-tools

REFERENCES

Centers for Disease Control and Prevention. (2018). *HPV and Cancer*. Retrieved from <https://www.cdc.gov/cancer/hpv/statistics/race.htm>

The project highlighted the impact of technology to be an essential component on vaccination uptake at the university level

Permission obtained from the SHS

