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# INCREASING KNOWLEDGE ABOUT HPV AND THE HPV VACCINE AMONGST COLLEGE STUDENTS

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INCREASING KNOWLEDGE ABOUT HPV AND THE HPV VACCINE AMONGST  
COLLEGE STUDENTS

A Scholarly Project Submitted to the Graduate School  
in Partial Fulfillment of the Requirements  
for the degree of  
Doctor of Nursing Practice

Morgan B. Baxter

Pittsburg State University

Pittsburg, Kansas

April 2020

INCREASING KNOWLEDGE ABOUT HPV AND THE HPV VACCINE AMONGST  
COLLEGE STUDENTS

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# INCREASING KNOWLEDGE ABOUT HPV AND THE HPV VACCINE AMONGST COLLEGE STUDENTS

An Abstract of the Scholarly Project by  
Morgan B. Baxter

This scholarly project included an education presentation to Pittsburg State University students enrolled in the Health Promotion class in the Fall of 2019, a pretest was taken before the educational presentation and then a posttest was completed to assess the student's knowledge of HPV and the HPV vaccine. The posttest evaluated whether there was an increase in knowledge after the presentation. In this scholarly project there was an overall increase in knowledge with statistical significance ( $p < 0.05$ ) after the presentation of evidence-based practice information of HPV and the HPV vaccine. There was an increase in posttest scores after the presentation in all participants ( $n=58$ ). Current research states overall low HPV vaccine uptake and this study shows that many college students are not aware of HPV and HPV vaccine evidence-based information. This project validates the need for continued education for students of HPV and the HPV vaccine.

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## **CHAPTER I**

### **Introduction**

The most common sexually transmitted infection (STI) is the human papillomavirus (HPV). HPV is a family of viruses that infects the epithelial tissue of males and females. Many people are exposed to this virus without symptoms. Before there was a vaccine for HPV, approximately 17 million young adults aged 15-24 years old had a prevalent HPV infection. It is likely almost every person will be infected with HPV in their lifetime (Centers for Disease Control and Prevention, 2019). Due to the many different strands of HPV sometimes the body is able to get rid of the disease without symptoms or disease and other times the strand can cause the person cancer. The STI is known to cause at least six types of cancer and genital warts (Satterwhite et al., 2013). More than 90% of cervical cancer and 63-75% of vulvar, vaginal, oropharyngeal, and penile cancer can be linked to HPV (Steinau et al., 2013). A vaccine was approved in 2014 that prevents HPV and HPV outcome related diseases (Centers for Disease Control and Prevention [CDC], n.d.). The HPV vaccine uptake has increased since 2013, from 19.6% to 29.5% of Kansans being vaccinated. This is significantly below the Healthy People 2020 goal of 80% vaccine uptake (Gillespie, 2018). The HPV vaccine is essential to the public to protect from diseases that have serious side effects and can possibly result in death.

## **Background**

There are more than 150 subtypes of HPV that have been identified. Some HPV subtypes can cause common warts, such as those on the hands and feet by infecting cutaneous epithelial cells. At least 40 of the subtypes of HPV can involve the areas of genitals, mouth, and throat by infecting the mucosal epithelial cells. (CDC, n.d.). Once infected with HPV many people do not know they have the virus because they are asymptomatic and resolve without complication. In some cases, HPV lasts longer than two years and can cause certain cancers of the cervix, vulva, and vagina, in women; cancer of the penis in men; and cancers of the back of the throat, anus, tongue, and tonsils in both genders (CDC, 2018c). HPV type 16 and 18 are high-risk viruses and cause 80% of the cancers from HPV. Genital warts and possibly laryngeal papillomas are caused by the lower risk HPV types. Both subtypes can cause low-grade cervical cell changes. Low-risk HPV types 6 and 11 almost always cause genital warts and papillomas (CDC, n.d.)

HPV is spread by anal, vaginal, and oral sex, with someone who has the HPV virus. The virus is most commonly spread by vaginal and anal sex. In the United States, there have been three different HPV vaccines available: two are U.S. Food and Drug Administration (FDA) approved include Gardasil (Quadrivalent) and Gardasil 9 (9-valent). Gardasil 9 was approved in 2014, it was studied with more than 15,000 participants before the vaccine was released and is continually monitored by the CDC. Gardasil 9 has been the only HPV vaccine available since 2016 in the United States. This vaccine protects against HPV types: 6, 11, 16, 18, 31, 33, 45, 52, and 58, which includes seven types that

cause cancer. The original Gardasil was approved in 2006, this vaccine was tested was on more than 29,000 individuals. Gardasil protects against HPV types 6, 11, 16, and 18 (CDC, 2018d). Cervarix, the 3<sup>rd</sup> HPV vaccine has been discontinued due to lack of use because of Gardasil. HPV causes approximately 32,500 cancers each year, 30,000 of those are preventable with the current HPV vaccine (CDC, n.d.)

The HPV vaccine is recommended for patients between the ages of 9 to 26 for women ages 9 through 21 for men. The vaccine is recommended for transgender patients and for men that have sex with men until age 26. Recommendations state children age 11 or 12 should get the vaccine before they become sexually active and can receive the vaccine as early as nine years old. Two vaccines six to 12 months apart are required to be fully vaccinated against HPV. If the child is over 14 years of age the child still qualifies for the vaccine, but three injections are needed six months apart to be fully vaccinated against HPV. If a patient is immunocompromised, three doses is recommended regardless of age or gender (CDC, 2018c). Recommendations are to receive the full recommended doses of the HPV vaccine before becoming exposed to HPV. Even if you contract one strain of HPV the vaccine will protect you from the other strains of HPV the vaccine covers. The vaccine can still be given if the person receiving the vaccine is ill with a minor illness such as an upper respiratory tract infection, without or with a fever, or diarrhea. If a woman has had an abnormal pap, positive HPV test, or genital warts she is still able to receive the vaccine, but the vaccine may not be as effective based on the existing HPV infection. Women that are currently breastfeeding are able to safely obtain the HPV vaccine. Contraindications of vaccine administration includes anyone with a

known allergy to the Gardasil vaccine or hypersensitivity to yeast, a severe or moderate illness, and pregnancy. Although studies have shown the HPV vaccine does not harm the mother or fetus. A negative pregnancy test is not needed before vaccine administration (Centers for Disease Control and Prevention, n.d.) The vaccination is not recommended for adults older than 26 years of age since the vaccination provides less benefit from possible prior exposure to HPV. Engaging with a new sexual partner is a risk for a new HPV infection. The vaccine will not treat any existing HPV infections but does prevent new HPV infections (CDC, 2019).

Research conducted in Kansas states that females are twice as likely to receive at least one dose of the vaccine compared to males. If the child is older, 15 to 17 years of age, they are twice as likely to receive at least one dose of the vaccine compared to younger children. Also, in Kansas it was shown that more populated urban counties are 1.5 times likely to receive at least one dose of the vaccine compared to rural counties (Gillespie, 2018). One reason children are not being vaccinated is low caregiver education level (Forshaw et al., 2017). There are many different reasons parents choose not to vaccinate or delay vaccination including: medical, religious, philosophical, or socioeconomic status (Ventola, 2016).

### **Significance of the Problem**

HPV is a virus that is very common. Approximately 80 million or one in four people have the HPV virus in the United States. On average, 14 million people contract the HPV virus every year, mostly teens and young adults. Yearly HPV causes 33,700 cancers in women and men from the HPV infection (Centers for Disease Control and Prevention, 2018c). Although HPV is known for causing cervical cancer, HPV causes

20,000 approximately cancers that are non-cervical each year in the United States.

Oropharyngeal cancer caused by the HPV infection affects approximately 10,100 men in the United States each year. Approximately 12,000 women are diagnosed with cervical cancer each year with recommended screening and treatment. It is said that more than 4,000 women die every year in this country from cervical cancer (Centers for Disease Control and Prevention, n.d.).

The only cancer caused by HPV providers screen for routinely is cervical cancer. Other types of HPV are not usually detected and explored until the person becomes symptomatic. Because of this prevention is key. Starting at age 21 routine cervical cancer screening begins and continues through age 65. Even with the HPV vaccine, routine cervical cancer screenings should take place as recommended. The HPV vaccine is safe and effective. Several studies have shown the vaccine to be effective in protecting against HPV for greater than 10 years. Ongoing research is being conducted on HPV and the HPV vaccine (Centers for Disease Control and Prevention, n.d.). Despite this research vaccination rates remain lower than the Healthy People 2020 goal of 80% vaccination uptake in Kansas and United States as a whole (Gillespie, 2018).

### **Significance to Nursing**

This subject plays a part to nursing in many ways. Advanced practice registered nurses (APRN) manage many individuals preventative care. Educating the patient as well as their parent or guardian if applicable of HPV and the benefits of the HPV vaccine is essential. Health care providers are key in routine gynecological exams that screen for HPV and provide treatment for HPV if needed.

### **Specific Aims/Purpose**

This study will assess the knowledge of a health promotion class in the fall of 2019 at Pittsburg State University in Pittsburg, Kansas, before and after an educational presentation of HPV and the HPV vaccine, by survey administration. Resources of where the HPV vaccine can be obtained will be communicated to the students.

The aims of this study includes informing college students about HPV and the HPV vaccine and assessing knowledge before and after education is obtained about HPV and the HPV vaccine. The students in this project are enrolled in the fall 2019 Health Promotion class offered at Pittsburg State University. This class is open to all majors including pre-nursing and exercise science. It is possible that many of these students will one day be involved in healthcare. This will likely increase knowledge of HPV and HPV vaccine in the healthcare field and the general public.

### **Theoretical Framework**

The Health Belief Model (HBM) can be applied to increasing HPV and HPV vaccine knowledge and uptake. This model was initially used on low response of free tuberculosis screening. Since the 1950's, this framework is often used to understand health behavior and promote health practices (University of Twente, 2017).

There are three major assumptions of this framework. The HBM implies that a person will engage in a health-related action if the person feels the undesirable health condition can be avoided; has an expectation that by utilizing a recommended practice, he/she avoid the undesirable health condition; and believes that he/she can successfully take the suggested health action. There are six concepts to this model including: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues

to action, and self-efficacy. All assumptions and concepts of this model can be applied to this topic (University of Twente, 2017).

Table 1:

*Application of the Health Belief Model*

Concept	Definition	HPV vaccine
1. Perceived susceptibility	“One's opinion of chances of getting a condition”	Persons <26 years of age believe they can acquire HPV.
2. Perceived severity	“One's opinion of how serious a condition and its consequences are”	Persons <26 believe that the consequences of getting HPV are significant enough to try to avoid.
3. Perceived benefits	“One's belief in the efficacy of the advised action to reduce risk or seriousness of impact”	Persons <26 believe that the suggested action of the HPV vaccine would protect them from getting HPV.
4. Perceived barriers	“One's opinion of the tangible and psychological costs of the advised action”	Persons <26 identify personal barriers to getting the HPV vaccine and explore ways to eliminate or reduce barriers.
5. Cues to action	“Strategies to activate "readiness””	HPV vaccine information will be presented. An incentive will be presented to Persons <26 who receive the HPV vaccine.
6. Self-efficacy	“Confidence in one's ability to take action”	Persons <26 will be confident in the HPV vaccine protecting them against HPV.

Reproduced from University of Twente, 2017

### **Project Questions**

The practice problem identified is low HPV vaccine rates in the state of Kansas, this leads to increased risk and exposure of HPV that can lead to cancer and other chronic health conditions. The aim of this project is to evaluate the knowledge of HPV and the HPV vaccine and educate a group of Pittsburg State University health promotion students

with evidence-based facts. This project will assess whether the education provided increased knowledge of HPV and the HPV vaccine. Research questions in this project include:

1. What are the demographics (gender and age) of the respondents?
2. Will students have heard of the HPV vaccine pre-education?
3. Will students have heard of HPV pre-education?
4. What is the respondent's HPV knowledge pre-education?
5. Has a healthcare provider recommended the HPV vaccine to the respondent?
6. Has the respondent received at least one dose of the HPV vaccine series?
7. What is the respondent's HPV knowledge post-education?
8. Did education increase the knowledge of HPV post-education?

### **Definition of Key Terms/Variables**

Terms that may not be recognized by colleagues or review include: Centers for Disease Control and Prevention (CDC), college-aged, Gardasil, Gardasil 9, human papillomavirus (HPV), immunity, vaccination, vaccine, and vaccination uptake.

1. Centers for Disease Control and Prevention (CDC) – A major group that oversees and tracks health related issues and diseases for the United States government. The CDC is an agency that is recognized as the nation's premiere health promotion, preparedness, and prevention agency (Centers for Disease Control and Prevention, 2018a).
2. College-aged – The general age in which students generally attend a higher education, typically 18-24 (YourDictionary, 2019).



3. Gardasil – The first approved HPV vaccine in 2006. Safety of this vaccine was proven by clinical trials of more than 29,000 participants and continues to be monitored. This vaccine only protects against 4 strains of HPV: 6, 11, 18, and 18 (CDC, 2018d).
4. Gardasil 9 (9-valent) – Also referred to as the HPV vaccine. The only current HPV vaccine used in the United States that prevents nine types of HPV: 6, 11, 16, 18, 31, 33, 45, 52, and 58. This vaccine was studied with 15,000 participants before approved by the FDA in 2014 and continues to be monitored (CDC, 2018d).
5. Human papillomavirus (HPV) – “A type of virus that can cause abnormal tissue growth (for example, warts) and other changes to cells. Infection for a long time with certain types of human papillomavirus can cause cervical cancer. Human papillomavirus may also play a role in some other types of cancer, such as anal, vaginal, vulvar, penile, and oropharyngeal cancers. Also called HPV” (National Cancer Institute, n.d, para 1).
6. Immunity – protection from a disease, if exposed you will not be infected (CDC, 2018e).
7. Immunization – the process of obtaining protection through vaccination from diseases, also used interchangeably with vaccination, inoculation, or vaccination uptake (CDC, 2018e)
8. Vaccination – receiving a vaccine that will allow the body to gain immunity against a specific disease; inoculation (Lexico, 2019)

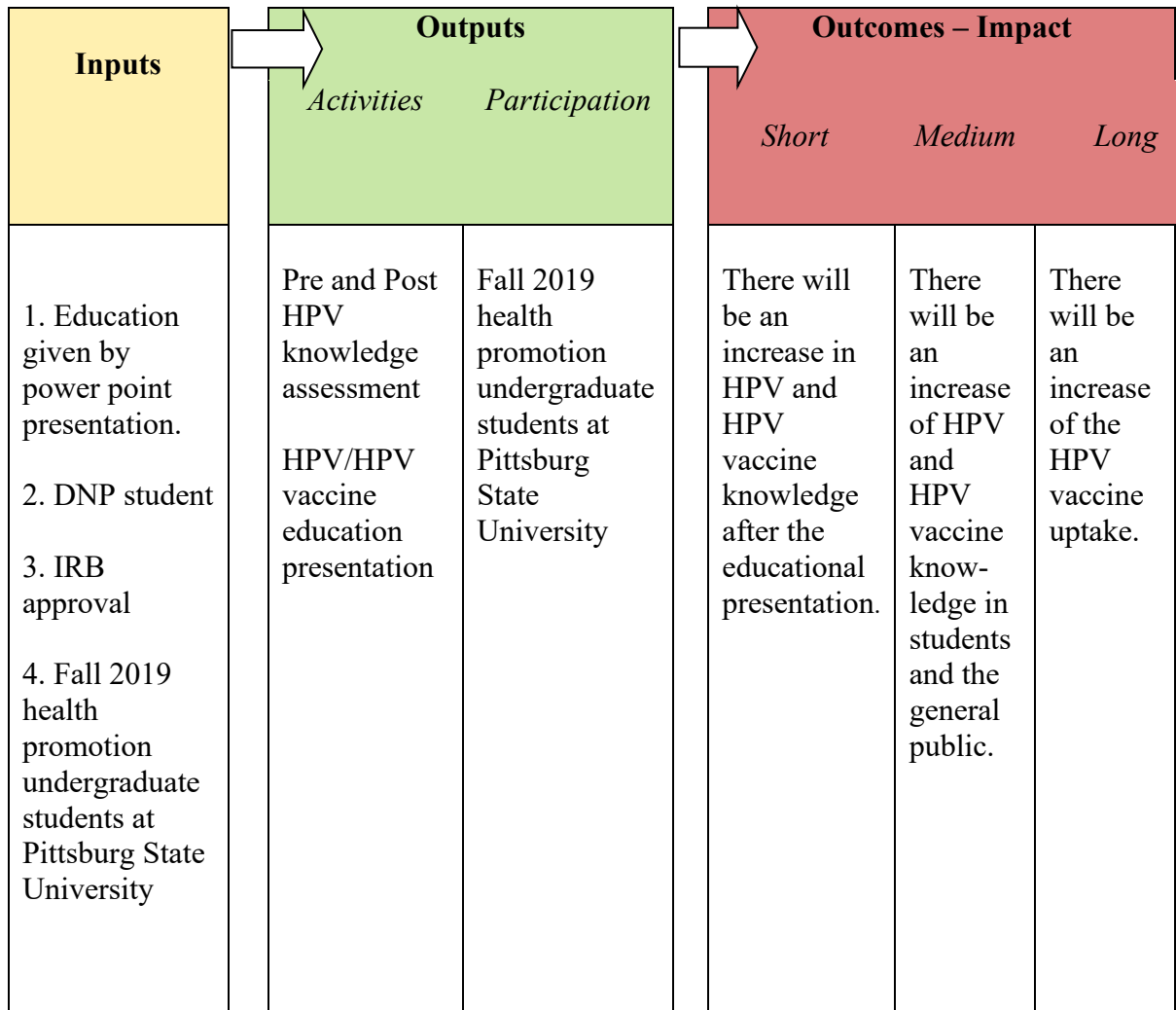
9. Vaccine – “A product that stimulates a person’s immune system to produce immunity to a specific disease, protecting the person from that disease. Vaccines are usually administered through needle injections but can also be administered by mouth or sprayed into the nose” (CDC, 2018e, para 2).
10. Vaccination uptake – the process of obtaining a vaccination.

### **Logic Model**

This logic model represents relationships starting with inputs, outputs, and outcomes. Short term outcomes include increasing HPV and HPV vaccine knowledge in college students, assessing pre and post education HPV and HPV vaccine knowledge. Medium term outcomes include an increase of HPV and HPV vaccine knowledge in students and the general public. A long-term outcome of this project is increasing HPV vaccine uptake. There are assumptions and external factors that contribute to the success of this project. Assumptions include students gaining knowledge from the education and the students taking the pre and posttest to the best of their ability. External factors include availability of the vaccine, cost of the vaccine, and personal beliefs and attitudes.

Figure 1:

*Logic Model*



**Assumptions**

Students will gain knowledge after the presentation and HPV vaccination rates will increase.  
 Students will take the assessment to the best of their ability.

**External Factors**

Personal beliefs and attitudes  
 Cost  
 Availability

## **Summary**

HPV is a very common virus that most people contract throughout their lifetime. The number of people that remain unvaccinated in Kansas from HPV remains low, even though research shows the vaccine provides many benefits. This education focuses on providing education to Pittsburg State University undergraduate students from many majors including nursing and other health related majors. This knowledge will contribute to the knowledge of HPV in hopes to raise the HPV vaccination rate. Chapter II provides a literature review on HPV knowledge and the HPV vaccine.

## **CHAPTER II**

### **Literature Review**

Vaccines are one of the greatest defenses from deadly diseases. Vaccines have evolved over time and in recent years vaccines that protect against cancer have been developed. This literature review will focus on and describe the many different factors that lead to compliance of the two or three dose HPV vaccination that is obtained by the public from age 11 through 26.

#### **Purpose**

The purpose of this literature review is to analyze barriers that contribute to omitting the HPV vaccination and possible implications for the public and healthcare professionals including the advanced practice registered nurse. This literature review will examine what barriers; perceived or actual, prevent young adults and children from getting recommended vaccinations. Interventions that could be used to increase the rate of vaccinated young adults will be reviewed and how primary care providers can implement these interventions. Whether providers adequately communicate immunization education and benefits with patients, parents, and guardians will be analyzed. Factors that affect the status of a child being vaccinated include: lack of information and education, beliefs, and lack of access or financial means.

## **Method**

An electronic search was conducted using the database CINAHL Plus with full text to identify studies published between 2014-present. Articles researching the HPV vaccine have been published for over 13 years but for current information, the search was limited to the last five years. Search terms used were “HPV vaccine”. Only full-text, English articles in the geographic region of the United States was involved in the search. Initially searching for “HPV vaccine” with the above indications resulting in 146 results.

## **Practice Change Guidelines**

### **Selection of Best Practice Guidelines**

The General Best Practice Guidelines for Immunization was established by the Advisory Committee on Immunization Practices (ACIP). There are 10 documents that include specific recommendations of vaccines in this clinical practice guideline (CPG). This guideline is updated every three to five years by both review and analysis of current scientific data and expert opinions of different health-care providers and officials from public health which are members of the General Recommendations Work Group (GRWG). Several groups of healthcare are professionals involved including family practice, pediatrics, and pharmacy. To appraise the quality of this CPG the AGREE II instrument was used (AGREE Next Steps Consortium, 2013). The Grading of Recommendations Assessment Development and Evaluation (GRADE) system was used to rate the CPG. This CPG was found to have high quality of evidence and research including key evidence and guidelines to defend the strong strength of the recommendations. The 10 documents contained guidelines for all developed vaccines

recommended by the CDC, this paper will focus on the guidelines pertaining to the HPV vaccine.

Table 2:

*Summary of General Best Practice Guidelines for Immunizations*

Document	Vaccine & dose number	Recommended age for this dose	Minimum age for this dose	Recommended interval to next dose	Minimum interval to next dose
Three – timing and spacing of immune-biologics	HPV Two Dose Series (If starting the vaccine at age 9 through 14 years old)				
	HPV – 1	11-12 years	9 years	6 months	5 months
	HPV – 2	11-12 years	9 years + 5 months	-	-
	HPV Three Dose Series (Typically given at age 15 and older)				
	HPV – 1	11-12 years	9 years	1-2 months	4 weeks
	HPV – 2	11-12 years	9 years (+4 weeks)	4 months	12 weeks
	HPV – 3	11-12 years (+6 months)	9 years (+5 months)	-	-
	(Quality of Evidence – High, Strength of Recommendation -Strong)				
Document 4 – Contraindi-	1. Contraindications include any severe allergic reaction or anaphylaxis after a previous dose of the HPV vaccine or to any vaccine component, which includes yeast.				

<p>cations and precautions</p>	<p>2. Conditions commonly mistaken as contraindications or precautions for all general vaccines, including HPV, and this includes any acute mild illness that does or doesn't produce a fever, patient does not have a previous physical exam in a well-appearing person, if a person is on antibiotics, mending phase of an illness, recurrent exposure to an infectious disease, history of other non-vaccine allergies, penicillin allergy.</p> <p>3. Common mistaken contraindications and precautions specific for the HPV vaccine include: previous abnormal papanicolaou test, breast feeding, history of genital warts, a current HPV infection, or immunosuppressed.</p> <p>(Quality of Evidence – High, Strength of Recommendation, Strong)</p>
<p>Document five – preventing and managing adverse reactions</p>	<p>1. If an adverse reaction occurs with a vaccine this is reported in the Vaccine Adverse Event Reporting System (VAERS). In 2005, the HPV, MenACWY, and Tdap vaccines were flagged in this system, due to the vaccines causing syncope. If syncope occurred these adolescents were at in increased risk for injuries due to the syncope including skull fractures and cerebral hemorrhages. Between January 1, 2005 to July 31, 2007 463 VAERS reports were issued due to syncope and 41</p>



	<p>of those obtained secondary injuries. Approximately 76% of those reports were categorized as adolescents. Within 15 minutes of vaccine administration 80% of the syncope episodes happened among all age groups. This has encouraged providers to be proactive when giving vaccines to prevent injuries due to dizziness or syncope. When giving the vaccine the patient should be sitting or lying down and the patient should be observed for 15 minutes after administration, if symptoms develop the patient should be kept until all symptoms resolve.</p> <p>2. Serious allergic reactions are rare occurring one per million dose for many different vaccines. Airway management equipment and epinephrine should be available to be used immediately if a reaction occurs. The best practice to avoid allergic reactions is to obtain a thorough history.</p> <p>(Quality of Evidence – High, Strength of Recommendation, Strong)</p>
Document six – Vaccine admin- istration	<p>1. The HPV vaccine is a 0.5 ml dose and to be given intramuscularly.</p> <p>(Quality of Evidence – High, Strength of Recommendation, Strong)</p>

Document seven – storage and handling of immunobio- -logics	<p>1. The HPV vaccine is to be stored at a temperature of 2-8 degrees Celsius, the vaccine is not to be frozen and is not to be diluted.</p> <p>(Quality of Evidence – High, Strength of Recommendation, Strong)</p>
Document nine – Special situations	<p>1. Research does not recommend pregnant women receive the vaccine even though it is not a live virus and no evidence exists showing the vaccine to be harmful to the fetus.</p> <p>(Quality of Evidence – Moderate, Strength of Recommendation, Strong)</p>
Document eleven – Vaccinat- ion programs	<p>1. The HPV vaccine is said to be critical for adolescents and young adults in general due to a higher risk or increasing risk of the HPV infection. Vaccination of the HPV is essential in preventing disease.</p> <p>2. To improve vaccination rates among children, adolescents, and adults, recommendations of interventions were researched. Community education alone had insufficient evidence on whether it was effective and community-based interventions implemented in combination was recommended to increase vaccine rates.</p>

	(Quality of Evidence – High, Strength of Recommendation, Strong)
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Reproduced from Ezeanolue, Harriman, Hunter, Kroger, & Pellegrini, C., 2017.

### **Lack of Information**

Lack of information can be a contributing factor to not receiving the HPV vaccine. Research has identified that the lack of information regarding HPV and the HPV vaccine exist. College-aged students might already know what HPV and the HPV vaccine, but others may not recognize these topics.

According to Lai, et al., (2016) a 21-item survey was used to assess 228 African American, African refugee, Hispanic/Latino, American Indian, and Native American from community organizations of their knowledge of the HPV vaccine. The majority of the respondents were age 35-50, female, and married, or living as married. Almost 67% of the surveys participants were immigrants and over half had health insurance. Approximately 46.5% of the respondents had heard of the HPV vaccine. The study found that people less acculturated were more likely to learn about HPV through personal networks, such as friends, family, and church. Participants born in the US were more likely to learn about the HPV vaccine through media such as social networks, billboards, and television. The study found that healthcare system sources were the most preferred source of HPV information. The participant had an increased accuracy of knowledge of the HPV vaccine if the healthcare provider educated the patient on the HPV vaccine. The study stressed the need for more culturally aware HPV

education that could provide an increased uptake of the HPV vaccine (Lai, et al., 2016).

According to Macarthur (2017), a study of 755 college students from a large midwestern university were asked about their health beliefs, and if this related to whether they had received the HPV vaccine. The study was conducted between November 2012 and January 2013. The study concluded that the belief in one's health care provider is directly linked to an uptake in the intentions of the HPV vaccine

### **Lack of Education**

Education regarding HPV and the HPV vaccine can be overwhelming. Health care providers are responsible for providing accurate education to patients. Studies indicate that a health care providers recommendation influences the HPV vaccine uptake.

A qualitative study conducted by Ogunbajo, Hansen, Noth, Okoloko, & Niccolai, (2016) researched knowledge of HPV and the HPV vaccine from the parents and legal guardians of children aged 10-18 from lower incomes and ethnic minorities. Many participants felt the HPV vaccine was no different than any other vaccine in that they prevent disease, was administered the same, and believe in the recommendation of the health care provider. The fact that HPV prevents cancer, which was viewed as a serious disease, was one of the greatest benefits. Mixed opinions were stated from the parents due to the mode of sexual transmission for HPV. Most guardians and/or parents had a positive view of the HPV vaccine. Ogunhaio et al. (2016) stated strategies for increasing the uptake

of the HPV vaccine in this age group is bundling the vaccine with the TDAP and meningitis vaccine or school entry requirements.

A study conducted by Kornides, Calo, Heisler-MacKinnon, and Gilkey (2017), studied U.S. providers and clinic staff experiences of the 9-valent HPV vaccine, which is the current HPV vaccine administered. In this study of 211 participants the quadrivalent vaccine was used. When comparing the previous quadrivalent vaccine to the 9-valent vaccine providers stated they would strongly recommend (66%) or more strongly (33%) recommend the 9-valent over the quadrivalent. At least 61% of the study reported no concerns with the up-to-date HPV vaccine but 29% reported parental hesitancy, 17% insurance coverage issues, and 10% other issues. This study reported provider recommendation was the most important facilitator in obtaining the HPV vaccine. Parental concerns were not investigated which could be used by staff to educate further. Education of terminology was reviewed with providers regarding vaccines to not use words such as “new” with patients, for example, there is a new vaccine for HPV.

A survey of parents of adolescents regarding parental willingness of the HPV vaccine administration was conducted by Erves, Mayo-Gamble, Hull, Duke, and Miller (2017). In the study 47% of parents were willing to let their adolescent participate in the HPV vaccine clinical trial. There was a total of 30.7% African American and 48.3% Caucasian asked to participate. In total African Americans had a lower awareness of the HPV vaccine but no lower intentions to get the HPV vaccine. The child’s age, perceived advantages of the HPV vaccine, and trust in the medical researchers and being able to understand

the clinical trial information with ease was positively associated with parental willingness. Education was found to have a positive impact on the uptake of the HPV vaccine in this study.

An observational study conducted by Wilson, et al. (2016) examined factors related to HPV vaccine uptake of 325 18-26-year-old females in Utah. The results of the study stated 204 (62.8%) had received a single HPV vaccine: of those that received at least one dose of the HPV vaccine, 159 (48.9%) completed the HPV vaccine series. Lower age, not currently married, not practicing an organized religion, education on how HPV spreads, awareness of the relationship between HPV and cervical cancer, confidence in vaccine prevention, doctor recommendation and how influential the doctor's recommendation was were all factors contributed to completion of the HPV vaccine series as well.

### **Beliefs**

The HPV vaccine can have a stigma due to HPV being caused by unprotected, vaginal, anal, and oral sex. Even if intercourse only occurs with one person, the other person may have had other contacts before which can put anyone at risk that has unprotected sex with this person. Males are not screened for HPV and many times have no symptoms of a current HPV infection.

According to Franco, Mazzucca, Padek, and Brownson (2019) the highest completion of the HPV vaccine series is the District of Columbia with 62% and Rhode Island with 70.8%. The states with the lowest completion rates are Texas, Utah, South Carolina, Wyoming, and Mississippi. The states with higher non-

completion rates are known to be more conservative and religious states than those with higher completion rates. In these states there were no stricter education policies or vaccine exemptions. The study included 20,495 adolescents from all 50 United States. The study concluded that many factors contribute to the HPV vaccine uptake and completion including political beliefs, education through sex education, religion, and gender. The clinic is the most important location and the preferred source for information on deciding to complete the HPV vaccines. The television was the second preferred source, followed by schools and pamphlets.

A study focusing on factors associated with school nurses' HPV vaccine attitudes for school-aged youth by Rosen, DiClemente, Shepard, Wilson, and Fehr (2017) had 413 participants from the National Association of School Nurses' membership that completed a web-based survey. The study revealed that positive attitudes toward the HPV vaccine is associated with a higher HPV and HPV vaccine knowledge. This study reiterated additional education to be given about the HPV vaccine and HPV so that these nurses could relay the accurate information to parents to increase the uptake of the HPV vaccine.

### **Lack of Access**

Access to the HPV vaccine can be an issue due to cost and availability. The HPV vaccine can be expensive without insurance, which can be a barrier to vaccination. If the patient does not have transportation or time to receive the vaccine these can be factors as well.

A qualitative study conducted by Roncancio, et. al., (2016) of 51 in-depth interviews of Hispanic mothers of adolescents of the product, price, place, and promotion of the HPV vaccine. The study found that vaccine reminders, the fact that the HPV vaccine prevents illness and disease were the factors in those that completed the vaccine series. Those mothers that children had completed the vaccine series had no barriers. Mothers whose children had received the first dose of the HPV vaccine but not the 2<sup>nd</sup> or 3<sup>rd</sup> dose stated cost and lack of health insurance as barriers.

A study conducted by Britt and Britt (2016) looked at the rural healthcare needs related to the HPV vaccine. The study examined students from a rural and medically underserved campus with 327 participants. The HPV vaccine uptake was as follows: 48.3% no vaccine uptake, 38.8% reports one immunization, 8.4% reports two shots, and 4.5% reporting completion of the HPV vaccine series. The study found no significant relationship between, intent, gender, beliefs, and attitudes of the HPV vaccine. Gender was a predictor of vaccine uptake, the research recommends that males receive education that state they can receive the HPV vaccine, as it is known females can receive the HPV vaccine. The intent to complete the vaccine series is most linked to a doctor's recommendation. Barriers stated in this study were perceived susceptibility of HPV and cost. Increased vaccination rates were a result from positive attitudes of the HPV vaccine. The study recommended rural college campuses need to be targeted to complete the HPV vaccine. Creating a positive attitude of the HPV vaccine can motivate students to receive the HPV vaccine.



## **Implications**

There is a limited amount of research conducted in the United States specifically related to the HPV vaccine. More research should be conducted on these barriers to examine them further. Several of the research articles found only used a sample of females. The HPV vaccine pertains to all genders. No significant conflicting data was found. Many of the articles stressed belief in the health care providers recommendation, education about HPV and the HPV vaccine, and access to the vaccine.

## **Summary**

Vaccination compliance is a gray area to the public. It is important for healthcare providers to do research and relay that information to patients. Existence of vaccine preventable diseases and cancers prove that there is still room for improvement. Assessing for vaccine compliance is important at every visit with every patient.

There are many questions that are not answered from the literature review including what the views of HPV in Kansas are, what their concerns are for vaccinating with the HPV vaccine, and if these views differ in every state? A study being conducted of assessing HPV vaccine uptake, HPV vaccine, and HPV education at a rural college campus and what variables can be changed to improve vaccination rates could benefit the public.

## **CHAPTER III**

### **Project Design**

This chapter will review the design for this scholarly project. The sample group, instrument used, and statistical analysis will be discussed. A two-part study was performed to evaluate whether there will be an increase in knowledge post-education of HPV. A quantitative study was used to evaluate knowledge with a pretest and posttest. Several tests were used to evaluate responses including an independent sample t-test, a paired sample t-test, and a mean and standard deviations. Quantitative data generalizes numerical data across a group of people that can help explain an occurrence. The research ultimately supports or rejects the occurrence. This data can be presented into graphs and tables (McLeod, 2019).

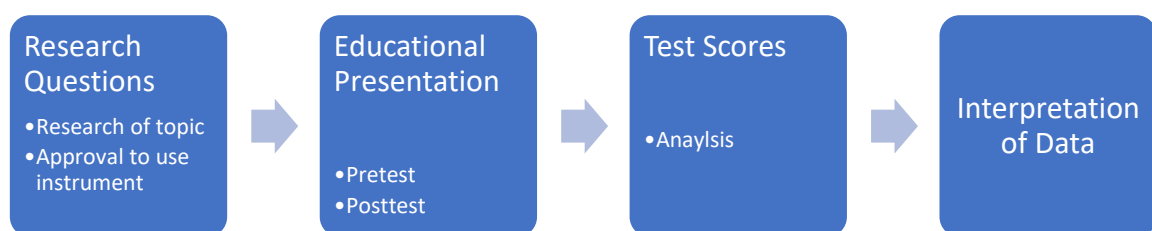
A descriptive research approach was used to study knowledge of HPV and the HPV vaccine among college students. The study educated 58 students on facts and evidence-based clinical practice guidelines regarding HPV and the HPV vaccine. The education was provided in the Pittsburg State University Fall 2019 Health Promotion class. The pretest included demographics, HPV experiences of study participants, and a questionnaire with 18 true/false questions.

Research of HPV and the HPV vaccine was obtained and studied by the researcher. The study was designed by utilizing research of the topic, the pretest was

developed from a previous study conducted by Salima Kasymova, Sayward Harrison, & Caroline Pasca, (2019), based on research found and objectives of this study. Approval was given to use previous use tool by the developer, Sayward Harrison. A pretest and posttest was administered in this study that was used from a previous study conducted by Salima Kasymova, Sayward Harrison, and Caroline Pascal and education was presented to the audience in the form of a PowerPoint. The pretest was complete prior to the educational presentation and the posttest was completed after the educational presentation. Analysis of the data obtained was reviewed by the researcher. This researcher and statistician ultimately interpreted the data collected. The data interpreted is available in this project in the following chapters. Presented below is the study design.

Figure 2:

*Study Design*



An educational presentation was designed for college students enrolled in the Health Promotion class. The study evaluated whether an increase of knowledge will be

obtained after evidence-based practice research was presented to the audience. The knowledge presented would expand on current knowledge with evidence-based practice.

The study focused on the following research questions:

1. What are the demographics (gender and age) of the respondents?
2. Will students have heard of the HPV vaccine pre-education?
3. Will students have heard of HPV pre-education?
4. What is the respondent's HPV knowledge pre-education?
5. Has a healthcare provider recommended the HPV vaccine to the respondent?
6. Has the respondent received at least one dose of the HPV vaccine series?
7. What is the respondent's HPV knowledge post-education?
8. Did education increase the knowledge of HPV post-education?

### **Settings and Participants**

The setting of this study was at the Pittsburg State University Irene Ransom Bradley School of Nursing lecture hall. The educational presentation was conducted on December 4<sup>th</sup>, 2019. The population of this study included students enrolled in the Health Promotion class in the Fall of 2019 at Pittsburg State University. All participants were eligible to participate in the pretest and posttest and the presentation, consent was implied with the completion of the pretest. The participants were all over the age of 18.

### **Recruitment**

The target population recruited for this presentation and survey is the Fall 2019 Health Promotion class at Pittsburg State University. This class consisted of 58 students includes pre-nursing, nursing, and health majors. The presentation was approximately 20 minutes in length, not including the pretest and posttest.

Participation was voluntary in nature; students were given the opportunity to leave class before the presentation began. No compensation, or extra credit was provided to the participants. Full participation in this study include completion of the pretest and posttest and being present for the educational presentation.

### **Inclusion/Exclusion Criteria**

Inclusion criteria for the pretest and posttest and presentation included all students enrolled in the Health Promotion class. The participant must be over the age 18. No other inclusion was used in this study. The specific exclusions for this study include being under the age of 18, not enrolled in the Pittsburg State University Health Promotion class, and not giving consent.

### **Protection of Human Subjects**

The checklist for human subjects was reviewed by the researcher and it was deemed that the study followed the Pittsburg State University human subjects and departmental guidelines for an exempt study. The process of the study was reviewed by the Human Subject Committee at Pittsburg State University. The population for the educational presentation was adult students over the age 18. The population does not contain any children, prisoners, or any specific people of race, religion, or ethnicity. There was no techniques that caused harassment or discomfort or deception of participants. Confidentiality was maintained throughout the study through numbering the pretest and posttest along with specific questions answered at the beginning of the pretest and posttest. There were no risks involved with participation in this scholarly project. Responses of this scholarly project was not disclosed outside of the scholarly project that

could place them at risk of civil or criminal liability or have any damage to their reputation, employability, or school standing.

Data was obtained from participants volunteering for the study. Completion of the pretest and posttest ensured consent for the study. Confidentiality was maintained throughout the study and the information obtained include four identifying factors of the participants: the first initial of mother's name, first initial of Mother's maiden name, first initial of the town they were born in, and first initial of their middle name, the surveys were numbered. After the surveys were complete, they were placed in a locked box only accessible to the researcher. At completion of the scholarly project the test were shredded.

### **Ethical Considerations**

There are few ethical considerations for this study. This descriptive study design has a pretest and posttest. Any ethical considerations focused around the test development and the answers provided. Consistent anonymity is the first ethical concern. The information obtained from the surveys remained confidential and was stored without identifiers so participants cannot be identified by any way or anyone. Participants truthfully answering surveys is the second ethical concern. Data can be skewed if someone intentionally provides false data. The test used is from a previous research project and validity and reliability has been proven.

### **Instrument**

The pretest and posttests were conducted by using pen and paper by the participants to gather quantitative data. There was three sections of the survey. The first section assessed demographic data. The second section assessed HPV experiences. The

third section assessed HPV knowledge. The posttest included only the third section along with a section that assessed impact of the education provided. The test contained yes/no and true/false responses. The pretest included demographics, HPV experiences, and 18 HPV knowledge questions. The posttest included the 18 HPV knowledge questions and a question that evaluates the impact of the education provided. The tool used is consistent with evidence-based practice.

### **Content Validity**

The survey tool accurately reflects students' knowledge of evidence-based practice guidelines of HPV and the HPV vaccine. The tool is from a previous peer-reviewed research study by Salima Kasymova, Sayward Harrison, and Caroline Pascal (2019). This tool yielded a strong internal consistency ( $\alpha=.79$ ). Contact was made with Dr. Sayward Harrison regarding reuse of the HPV survey and this was granted. Dr. Greg Belcher, Ph. D., Director of the Kansas Center for Career and Technical Education at Pittsburg State University, a committee member of this project reviewed validity of the survey.

### **Operational Definitions**

The following operational definitions are used in the purpose of this project:

1. Human papillomavirus (HPV) – A kind of virus that can cause abnormal tissue growth and other changes to cells. Long term infection with certain types of human papillomavirus or HPV can cause cervical cancer and can play a role in some other types of cancer, such as anal, vaginal, vulvar, penile, and oropharyngeal (National Cancer Institute, (n.d.).

2. Immunization – the process of obtaining protection through vaccination from diseases, also used interchangeably with vaccination, inoculation, or vaccination uptake (CDC, 2018e)
3. Vaccination – receiving a vaccine that will allow the body to gain immunity against a specific disease; inoculation
4. Vaccine – “A product that stimulates a person’s immune system to produce immunity to a specific disease, protecting the person from that disease. Vaccines are usually administered through needle injections but can also be administered by mouth or sprayed into the nose (CDC, 2018e).”

### **Procedure**

This project contained an educational presentation, a pretest, and a posttest. The participants were present for class in the Fall 2019 Health Promotion class at Pittsburg State University. Once seated the study was explained and students had the opportunity to dismiss themselves if desired. The participants were then handed a packet. The packet contained both the pretest and the posttest. The participants were instructed to not open the envelope until instructed, until the presentation was explained and questions answered. The participants were instructed to take the pretest out of the packet. The pretest contained demographics, HPV experiences, and HPV knowledge test. The pretest was completed and placed in the locked box, then the educational PowerPoint was presented to the class. The presentation was explained, and questions were answered. The educational program was presented and lasted approximately 20 minutes. There was an opportunity for participants to ask questions. The participants then removed the posttest



from the packet. The posttest contained the same HPV knowledge survey and possible future actions from the presentation. Once completed the posttest was secured in the locked box. The surveys were matched by number and specific responses on the surveys and data was logged into SPSS. All data was reviewed and is accurate to the researcher.

### **Data Collection**

The pretest contained demographic data. This ensured inclusion of the group and characterized the participant by gender. The data was collected kept confidential online and only accessed by the researcher. The results of the project is published in Chapter IV of the project without any identifying data. At the end of the project the tests were shredded.

The data was entered and analyzed using SPSS and formulations calculated. A probability level of  $p < 0.05$  is considered statistically significant. T-tests were conducted on the results of the pretest and posttest. A comparison of the pretest and posttest was conducted.

### **Outcome Data**

Based on the analysis of the pretest and posttest the following outcomes were generated by the SPSS program for the following research questions.

1. What are the demographics (gender and age) of the respondents?
2. Will students have heard of the HPV vaccine pre-education?
3. Will students have heard of HPV pre-education?
4. What is the respondent's HPV knowledge pre-education?
5. Has a healthcare provider recommended the HPV vaccine to the respondent?
6. Has the respondent received at least one dose of the HPV vaccine series?

7. What is the respondent's HPV knowledge post-education?
8. Did education increase the knowledge of HPV post-education?

## **Outcomes**

**Evaluation measures linked to objectives.** Objectives in the logic model was used for evaluation measures. The project contained an educational presentation with a pretest and posttest to evaluate knowledge of evidence-based research of HPV and the HPV vaccine. The outcomes that was evaluated include increasing HPV and HPV vaccine knowledge, assessing pretest and posttest data, and evaluating if data encouraged vaccine uptake if the participant had not received the HPV vaccine. If correct answers are answered on the posttest a positive outcome will be achieved. Short-term outcomes that was accomplished include increased knowledge of HPV and the HPV vaccine after the education presentation. Medium-term outcomes include an increase of vaccine knowledge in students and the general public. Long-term outcomes include that there will be increased rates of HPV vaccination, which will take years to evaluate. Further research should be conducted at that time.

The posttest was given directly after the presentation to keep the information relevant and no other information was obtained by the participants. The data obtained from the pretest and posttest was assessed to evaluate if an increase of knowledge occurred.

**Instrument Linked to Measures and Objectives.** This measurement tool included a pretest and posttest after an educational presentation over evidence-based research of HPV and the HPV vaccine. The instrument included an 18 HPV knowledge questionnaire. Demographic questions were on the pretest only. The posttest included the

same questions as the pretest. A total score of correct answers was tabulated for each participant. The test had a variety of questions with the HPV knowledge questionnaire being all true or false. Spontaneous responses were not allowed on the test. The test questions validated evidence-based research knowledge of HPV and the HPV vaccine. The table below represents questions answered and intended outcomes of the project.

Table 3:

*Objectives, Measurements, and Outcomes*

Objectives	Measurement	Outcome	Analysis
Participants will provide demographics.	Participants will provide basic demographics to ensure inclusion of the study.	Participants will choose accurate demographics.	t-test
Participants will have heard of the HPV vaccine pre-education.	Participants will submit if they have heard of the HPV vaccine pre-education.	Participants will correctly answer if they have heard of the HPV vaccine pre-education.	Mean and standard deviation
Participants will have heard of HPV pre-education.	Participants will submit if they have heard of the HPV pre-education.	Participants will correctly answer if they have heard of the HPV pre-education.	Mean and standard deviation

Participants will have knowledge of HPV pre-education.	Participants will submit correct answers on the pretest, pre-education.	Participants will appropriately identify correct answers in the HPV questionnaire, pretest.	t-test
Participant will have had a health care provider recommend the HPV vaccine.	Participants will have an increase of health care provider recommend the HPV vaccine.	Participants will submit whether a healthcare provider has recommended the HPV vaccine.	Mean and standard deviation
Participant will have received once dose of the HPV vaccine.	Participants will receive the HPV vaccine.	Participants will submit whether that have received the HPV vaccine.	T-test
Participants will have knowledge of HPV post education.	Participants will have an increase of HPV knowledge post education.	Participants will correctly answer questions on the posttest.	t-test
Participants knowledge of HPV will increase post education.	Participants will increase their knowledge of HPV post education by	Participants will submit correct answers on the post test questionnaire.	Independent samples t-test

	correct responses on the post test.		
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### **Methods of Analysis for Measurement**

To analyze the data collected the data was transferred into SPSS. The probability level accepted is  $p < 0.05$ . If less than 0.05 occurs then the outcome occurred by chance and not because of the educational presentation. Results occurring as a result of the education indicated a 95% confidence interval. To compare the pretest and posttest t-tests were used.

Each question was worth one point. The pretest and posttest was used to evaluate knowledge gained from the educational presentation of evidence-based research of HPV and the HPV vaccine. The HPV knowledge questions were all true/false answers.

### **Sustainability**

There is no specific criteria for sustainability. An effective way to increase knowledge of HPV and the HPV vaccine is through education. Sustainability can be ensured by education of evidence-based research of HPV and the HPV vaccine to health care providers. There are several different avenues that education can be provided to the public including through public schools, public health fairs, and through local doctors' offices. Planning and implementation will ensure sustainability of evidence-based research of HPV and the HPV vaccine.

### **Summary**

Evidence based research of the HPV and the HPV vaccine was presented as an educational presentation to a health promotion class of college students. A pretest was

completed prior to the education and a posttest was be obtained after the education. The survey included a questionnaire with 18 true/false questions. The results of this project are presented in Chapter IV.

## **CHAPTER IV**

### **Findings**

A descriptive research design was utilized in this scholarly project. This data was collected to determine if there would be an increase in knowledge about HPV and the HPV vaccine in college students in the Health Promotion class at Pittsburg State University after the students were provided with an educational PowerPoint lecture over HPV and the HPV vaccine. The data in this scholarly project was collected by a pretest, followed by an informative PowerPoint lecture concerning HPV and the HPV vaccine education and the posttest was collected. The sample included 58 students. The pretest contained demographic information and a HPV questionnaire of 18 questions. An educational PowerPoint was then presented. A posttest was then completed by the students that included the same 18 HPV questionnaire, along with inquiring if they intent to receive the HPV vaccination post education. The pretest contained demographic questions including gender, if they have ever heard of HPV and the HPV vaccine, and if a provider has ever recommended the HPV vaccine to them. The test also asked if they have obtained the HPV vaccine and 18 questions about HPV and the HPV vaccine.

#### **Demographic Data**

The demographic data collected from respondents included gender, of the respondents with 6.9% (n=4) male and 93.1% (n=54) were female. Most of the

respondents were female (93.1%). The study found 100% of the participants had heard of the HPV vaccine pre-education (n=58). Almost all of the participants have heard of HPV pre-education, 96.6% of students had heard of HPV (n=56) and 3.4% of students had not heard of HPV pre-education (n=2). Of the participants, 70.7% had the HPV vaccine recommended to them (n=41), 27.6% had not had the HPV vaccine recommended to them (n=16), and 1.7% of participants did not know if they have had the HPV vaccine recommended to them (n=1). The participants were asked if they had received at least one dose of the HPV vaccine series, 75.9% of students stated they had received at least one dose (n=44), 15.5% of students had not received the HPV vaccine (n=9), and 8.5% of respondents did not know if they had received the HPV vaccine (n=5).

Table 4:

*Gender of Participants*

	Frequency	Percent
Male	4	6.9
Female	54	93.1
Total	58	100.0

Table 5:

*Has the Respondent Ever Heard of the HPV vaccine?*

	Frequency	Percent
Yes	58	100.0



Table 6:

*Ever Heard of HPV Pre-education?*

	Frequency	Percent
Yes	56	96.6
No	2	3.4
Total	58	100.0

Table 7:

*Has a Healthcare Provider Recommended the HPV Vaccine to the Respondent?*

	Frequency	Percent
Yes	41	70.7
No	16	27.6
Don't Know	1	1.7
Total	58	100.0

Table 8:

*Has the Respondent Received at Least One Dose of the HPV Vaccine Series?*

	Frequency	Percent
Yes	44	75.9
No	9	15.5
Don't Know	5	8.6
Total	58	100.0

**Pretest and Posttest**

All participants were given a pretest prior to the education and posttest following the education. The tests were given to the participants in a large yellow envelope and grouped by a number code in the right-hand corner along with 4 anonymous answers at the top of each test. Both tests contained the same 18 HPV questionnaire that were true, false and focused on HPV education established by evidence-based-practices. The HPV

questionnaire was from a previous study conducted in South Carolina by Salima Kasymova, Sayward E Harrison, and Caroline Pascal in 2019. For each correct answer on the HPV questionnaire a point was received, if a person answered every question correct, they would receive 18 points.

### **Results of the Study**

The study concluded with statistical significance ( $p < 0.05$ ) that the education provided did increase the knowledge of the students with evidence-based facts on HPV. The posttest scores were higher after the education was presented. All pretest and posttest were completed entirely. The mean score of the pretest was 11.79 questions correct out of 18, with a standard deviation of 2.634. The mean score of the posttest was 16.47 questions out of 18, with a standard deviation of 1.513. This concluded that there was a difference between knowledge of HPV on the pretest and posttest. All participants had an increase in posttest scores after the education was presented ( $n=58$ ). After the education there were seven participants (50%) that reported they intended to receive the HPV vaccination.

Table 9:

#### *HPV Knowledge on Pretest and Posttest*

	Pretest Score	Posttest score
Mean	11.79	16.47
Std. Deviation	2.634	1.513

Table 10:

*The Difference in Knowledge of HPV on the Pretest and Posttest*

		Mean		SD	N		
Pair 1	Pretest Score	11.79		2.634	58		
	Posttest score	16.47		1.513	58		
		Paired Differences		t	df	Sig. (2-tailed)	
				Std. Error			
		Mean	SD	Mean			
Pair 1	Pretest Score - Posttest score	-4.672	2.793	.367	-12.739	57	.000

**Individual Comparison of Pretest and Posttest**

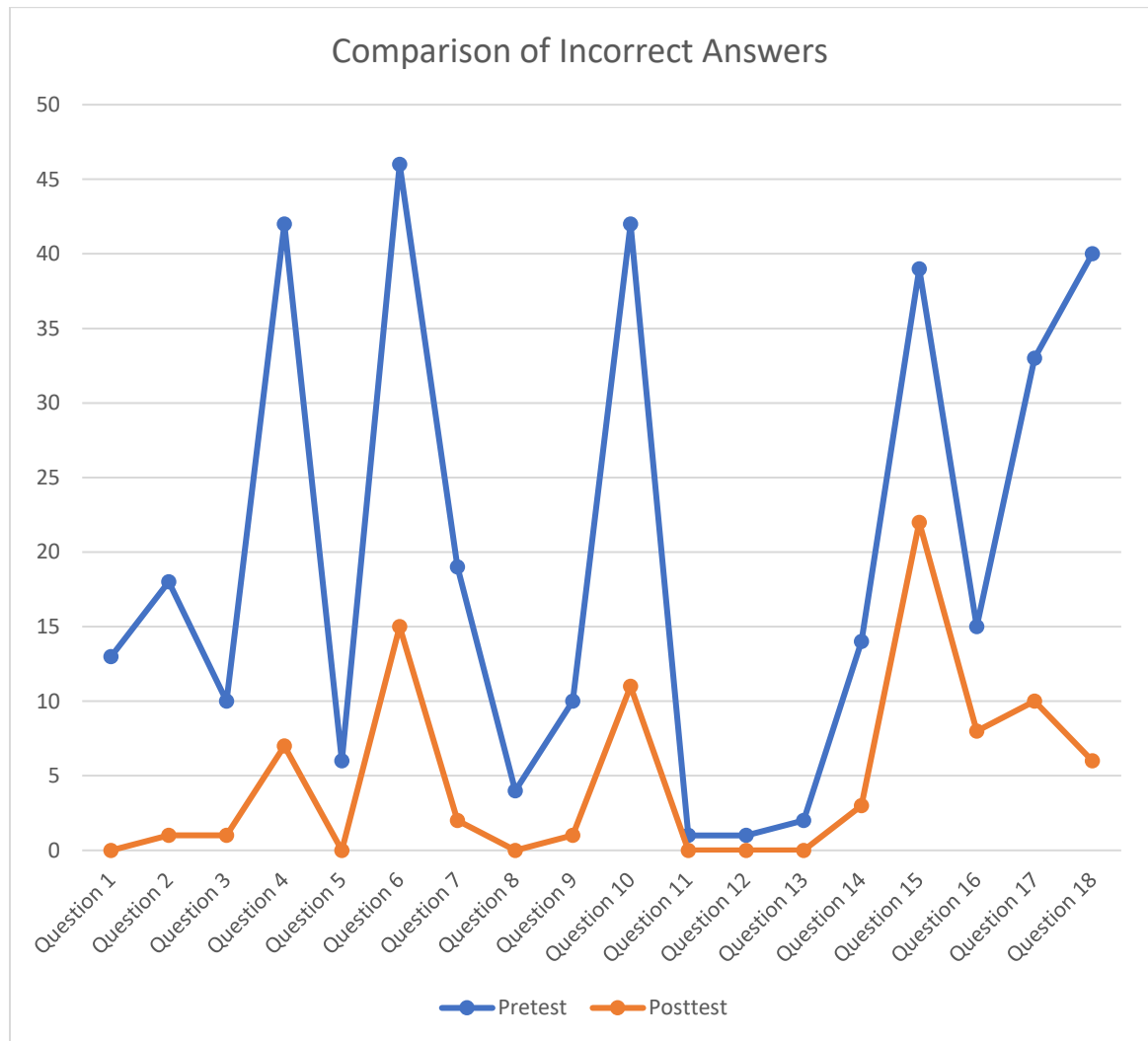
On the pretest the most missed question was question number six, most genital infections do not clear up on their own (false) with 79.3 percent of the students choosing the incorrect answer of true (n=46). Followed by question four, there is a test to commonly test males for HPV (false), and question 10, the HPV infection can cause genital herpes (false). Both of these questions had 72.4% of the students answer them incorrectly by stating they were false when in fact they are true (n=42). Question 18, nearly all sexually active men and women will contract HPV at some point (true), had 68.9% of students answer this question incorrectly stating that it was false (n=40). The questions that had the most answered correctly was question 11, certain types of HPV can lead to cervical cancer in women (true), and question 12, HPV can lay dormant in the body for years without symptoms (true) with 98.2% of students answering these two questions correctly (n=1).

On the posttest there are several questions with 100% of students answering the question correctly, questions 1, 5, 8, 11, 12, and 13 (n=0). Question one is, HPV is a sexually transmitted infection (true), question five is an abnormal Pap smear may indicate that a woman has HPV (true), question eight is HPV is not a very common virus (false), question 11 is certain types of HPV can lead to cervical cancer in women (true), question 12 is HPV can lay dormant in the body for years without symptoms (true), and question 13, a person's chances of getting HPV increase with the number of sexual partners they have (true). The most missed question on the posttest was question 15, genital warts can cause cervical cancer (false), with 37.9% of students answering this question incorrectly (n=22).

Question four, there is a screening that is commonly used to test males for HPV (false) and question 18 (nearly all sexually active men and women will contract HPV at some point (true) had the biggest improvement of correct answers from the pretest to the posttest, with a 35 point difference on question four and a 34 point difference on question 18.

Figure 3:

*Comparison of Incorrect Answers*



**Summary**

Chapter IV reviewed the statistical analysis of this project. A positive outcome of this project includes an increase knowledge about HPV and the HPV vaccine after the education was presented to this group of participants. Before the education was presented participants answered approximately 12 of the questions right out of 18 and after the

education the score increased to 16, showing improvement. This study concluded that even though most students were recommended the HPV vaccine there was still a knowledge gap about HPV and the HPV vaccine. The findings of this study confirm the need for more education about HPV and the HPV vaccine amongst college students to help prevent HPV and HPV related diseases.

## **CHAPTER V**

### **Summary, Conclusions, Recommendations**

This study included an educational presentation about HPV and the HPV vaccine following evidence-based facts and guidelines to evaluate overall knowledge of HPV. The study assessed students' knowledge after an educational presentation. A pretest was taken before any education and a posttest was given immediately after the education was presented. The project also evaluated if students had received the HPV vaccine or have had this vaccine recommended to them by a provider.

#### **Relationships of Outcomes to Research**

This study found that 75.9% of the participants had at least one dose of the HPV vaccine. This is still below the Healthy People 2020 goal of 80% of the public being vaccinated with the HPV vaccine. In a previous study by Salima Kasymova, Sayward Harrison, and Caroline Pascal (2019) the rate of HPV vaccination was 64.1% and 72.7% of participants reported a provider recommended the HPV vaccine. In this study, 70.7% of the participants reported a provider recommended the HPV vaccine to them. This is an opposite finding of this study that had a lower number of vaccinated participants and a higher number that had had the HPV vaccine recommended to them. More respondents in this project obtained this vaccine without recommendation from a provider than the previous study. The mean total score of the previous study was 8.9 on the pretest with a

standard deviation of 3.7. This study had a mean total score of 11.79 and a standard deviation of 2.634 on the pretest. One of the most missed questions on both of these studies was whether there is a screening commonly used to treat males and if HPV infections generally clear up on their own. There was also confusion on this study and the previous study on the distinction of HPV and genital herpes. Both studies found the majority of participants were aware of HPV. This study confirmed that more education is needed on HPV to the public including college students.

### **Observations**

Many different observations can be made from the data gathered on the pretest and posttest. The information gathered can be used to compare with previous studies and research. Even though one of the previous studies was done with a larger sample, similar data is found in this smaller study. A knowledge gap exists of HPV and the HPV vaccine with an average of the participants missing at least seven out of 18 questions. Even though the number of participants that reported obtaining at least one dose of the HPV vaccine is below the healthy people 2020 goal it was higher than previous studies at 75.9%. The number of participants that have had the HPV vaccine recommended to them was less than previous studies. This could possibly mean the participant did not have a providers recommendation before receiving the HPV vaccine. After the education the posttest results improved with the average participant missing less than two questions.

### **Evaluation of Theoretical Framework**

The theoretical framework applied to this project was the Health Belief Model (HBM). Following this theory, the increase of HPV knowledge will increase HPV knowledge and vaccination uptake. Education was provided and questions were answered



about HPV and the possible risk of HPV to the participant. Through education the participant learned they could avoid possible outcomes of HPV by obtaining the HPV vaccine. Because of this education there were seven participants that reported they would obtain the HPV vaccine. This follows the HBM. The education provided to the participants followed the six concepts. The participants were educated on the research regarding acquiring HPV and the consequences of HPV. The participants were educated on the HPV vaccine would protect them from further HPV strains. The participants were educated on barriers to prevent HPV infections. Evidence based practice research and guidelines were presented to the participants to assure them the HPV vaccine will protect them against HPV.

### **Evaluation of Logic Model**

This study measured the participants knowledge of HPV before and after an educational presentation presented to the fall 2019 health promotion undergraduate students at Pittsburg State University. The evaluated outcomes measured were knowledge of HPV and intention of the HPV vaccination after the presentation. There is an assumption that there will be an increase of HPV and HPV vaccine knowledge in the students enrolled at Pittsburg State University after this presentation.

Positive outcomes of this study include an increase of HPV and HPV vaccine knowledge after the presentation as indicated by pretest and posttest scores. Also, several participants reporting wanting to obtain the HPV vaccine to protect them from HPV. The project supported the logic model in all outcomes, short and medium. Long term outcomes were not able to be supported due to time limitations and was not evaluated.

### **Limitations**

There are several limitations to this study. One limitation is actual vaccination records were not obtained and self-reported. This could lead to a false number of vaccinated or unvaccinated participants. There was no follow-up to see if the participants intending to get the HPV vaccine actually received the HPV vaccine. The pretest and posttest was also self-reporting and it is assumed the participant answered the questions honestly and to the best of their knowledge on the surveys. The participant had both the pretest and posttest, it is assumed that directions were followed, and the pretest was completed and placed in a yellow envelope and no answers were changed after the presentation. The majority of the study participants were female, which leaves an unequal proportion of genders in this study. This study also contains many students involved in health-related majors which may have contributed to previous knowledge of HPV and the HPV vaccine. Long term outcomes could not be evaluated due to time constraints.

### **Implications for Future Projects**

Limitations stated above should be addressed for future studies. It would be appropriate to obtain immunization records of the sample to gain an accurate percentage of HPV vaccination. The researcher could easily verify if the participant has had the doses of the HPV vaccine to be fully covered. A follow-up in two months would be recommended for participants intending to get the HPV vaccine. There could also be another follow-up in a year to evaluate if they have talked or shared any information of HPV to anyone since the education was provided to evaluate an increase of HPV in the general public. Future projects with equal amount of male and female participants would evaluate if gender specific differences are noted. This project could be repeated in a non-health degree seeking college student to evaluate if differences in outcomes occur.

### **Implications for Practice/Health Policy/Education**

The goal of this project was to increase knowledge of HPV and the HPV vaccine among college students leading to an increase of HPV vaccination rates. Information of HPV and the HPV vaccine can be utilized by healthcare providers, future healthcare providers, and the general public. Results of this project contains important information to health care providers, policy makers, and the general public. This project reinforced that the Healthy People 2020 goal of 80% of HPV vaccination uptake is still not being met.

### **Conclusion**

This project provided participants with evidence-based research regarding HPV and the HPV vaccine. Studies show there is lack of information that contributes to the low HPV vaccine uptake. The knowledge gained in this project increased awareness of HPV and the HPV vaccine. It is possible many of these participants will have careers healthcare and influence in the uptake of the HPV vaccine. As evidenced by results of this project more education is needed among college students about HPV and the HPV vaccine to prevent the spread of HPV and improve the uptake of the HPV vaccine. This can prevent diseases caused by HPV and even cancer. To stop these outcomes evidence-based research of HPV and the HPV vaccine should be shared, among the community and healthcare workers.

## References

- AGREE Next Steps Consortium (2013). *The AGREE II instrument* [Electronic version]. Retrieved from <http://www.agreetrust.org>.
- Britt, R. K., & Britt, B. C. (2016). The need to develop health campaigns for obtaining the HPV vaccine in rural and medically-underserved college campuses. *Education & Health, 34*(3), 74–78. Retrieved from <https://search-ebscohost-com.library.pittstate.edu/login.aspx?direct=true&AuthType=ip&db=rzh&AN=118948346&site=ehost-live>
- Centers for Disease Control and Prevention. (2018a). About CDC 24-7. Retrieved from: <https://www.cdc.gov/about/history/index.html>
- Centers for Disease Control and Prevention. (2018b). HPV coverage data. Retrieved from: <https://www.cdc.gov/hpv/hcp/vacc-coverage/index.html>
- Centers for Disease Control and Prevention (2018c). HPV vaccines. Retrieved from: <https://www.cdc.gov/hpv/parents/vaccine.html>
- Centers for Disease Control and Prevention. (2018d). Vaccine safety. Retrieved from: <https://www.cdc.gov/vaccinesafety/vaccines/hpv-vaccine.html>
- Centers for Disease Control and Prevention. (2018e). Vaccines & immunizations. Retrieved from: <https://www.cdc.gov/vaccines/vac-gen/imz-basics.htm>
- Centers for Disease Control and Prevention. (2019). Human papillomavirus. Retrieved from: [https://www.cdc.gov/hpv/hcp/schedulesrecommendations.html?CDC\\_AA\\_refVal=https %3A%2F%2Fwww.cdc.gov%2Fhpv%2Fhcp%2Fclinician-factsheet.html](https://www.cdc.gov/hpv/hcp/schedulesrecommendations.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fhpv%2Fhcp%2Fclinician-factsheet.html)

Centers for Disease Control and Prevention. (n.d.). HPV Vaccine information for clinicians. Retrieved from: <https://www.cdc.gov/hpv/hcp/need-to-know.pdf>

Ervs, J., Mayo-Gamble, T., Hull, P., Duke, L., & Miller, S. (2017). Adolescent participation in HPV vaccine clinical trials: Are parents willing? *Journal of Community Health*, 42(5), 894–901.

<https://doi.org.library.pittstate.edu/10.1007/s10900-017-0331-x>

Ezeanolue, E., Harriman, K., Hunter, P., Kroger, A., & Pellegrini, C. (2017).

General best practice guidelines for immunizations. *Best Practices Guidance of the Advisory Committee of Immunization Practices (ACIP)*.

Retrieved from: <https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html>

Forshaw, J., Gerver, S. M., Gill, M., Cooper, E., Manikam, L., & Ward, H. (2017). The global effect of maternal education on complete childhood vaccination: a systematic review and meta-analysis. *BMC Infectious Diseases*, 171-16.  
doi:10.1186/s12879-017-2890-y

Franco, M., Mazzucca, S., Padek, M., & Brownson, R. C. (2019). Going beyond the individual: how state-level characteristics relate to HPV vaccine rates in the United States. *BMC Public Health*, 19(1), N.PAG. [https://doi-org.library.pittstate.edu/10.1186/s12889-019-6566-y](https://doi.org.library.pittstate.edu/10.1186/s12889-019-6566-y)

Gillespie, K. (2018). Adolescent vaccination coverage in Kansas, an analysis of BRFSS surveys. *Kansas Department of Health and Environment*.

- Healthy People 2020. (2014). HPV vaccine, adolescents, 2008-2012. Retrieved from:  
<https://www.healthypeople.gov/2020/topics-objectives/national-snapshot/hpv-vaccine-adolescents-2008%E2%80%932012>
- Kasymova, S. Harrison, S. E., & Pascal, C. (2019) Knowledge and awareness of human papillomavirus among college students in South Carolina. *Infectious Diseases: Research & Treatment*, 12, N.PAG.  
<https://doi.org.library.pittstate.edu/10.1177.1178633718825077>
- Kornides, M. L., Calo, W. A., Heisler-MacKinnon, J. A., & Gilkey, M. B. (2018). U.S. Primary care clinics' experiences during introduction of the 9-Valent HPV vaccine. *Journal of Community Health*, 43(2), 291–296. <https://doi-org.library.pittstate.edu/10.1007/s10900-017-0420-x>
- Lai, D., Bodson, J., Davis, F., Lee, D., Tavake-Pasi, F., Napia, E., & Kepka, D. (2017). Diverse families' experiences with HPV vaccine information sources: A community-based participatory approach. *Journal of Community Health*, 42(2), 400–412. <https://doi-org.library.pittstate.edu/10.1007/s10900-016-0269-4>
- Lexico. (2019). Vaccination. Retrieved from:  
<https://www.lexico.com/en/definition/vaccination>
- MacArthur, K. R. (2017). Beyond health beliefs: The role of trust in the HPV vaccine decision-making process among American college students. *Health Sociology Review*, 26(3), 321–338. <https://doi-org.library.pittstate.edu/10.1080/14461242.2017.1381035>

- McLero, Saul. (2019). What's the difference between qualitative and quantitative research? Retrieved from: <https://www.simplypsychology.org/qualitative-quantitative.html>
- National Cancer Institute. (n.d.). NCI dictionary of cancer terms. Retrieved from: <https://www.cancer.gov/publications/dictionaries/cancer-terms/def/human-papillomavirus>
- Ogunbajo, A., Hansen, C. E., North, A. L., Okoloko, E., & Niccolai, L. M. (2016). "I think they're all basically the same": Parents' perceptions of human papilloma virus (HPV) vaccine compared with other adolescent vaccines. *Child: Care, Health & Development*, 42(4), 582–587. <https://doi-org.library.pittstate.edu/10.1111/cch.12331>
- Roncancio, A., Ward, K., Carmack, C., Muñoz, B., Cano, M., & Cribbs, F. (2017). Using social marketing theory as a framework for understanding and increasing HPV vaccine series completion among hispanic adolescents: A qualitative study. *Journal of Community Health*, 42(1), 169–178. <https://doi-org.library.pittstate.edu/10.1007/s10900-016-0244-0>
- Rosen, B. L., DiClemente, R., Shepard, A. L., Wilson, K. L., & Fehr, S. K. (2017). Factors associated with school nurses' HPV vaccine attitudes for school-aged youth. *Psychology, Health & Medicine*, 22(5), 535–545. <https://doi-org.library.pittstate.edu/10.1080/13548506.2016.1173710>
- Satterwhite, C.L., Torrone, E., Meites, E., Dunne, E.F., Mahjan, R., Ocfemia, M.C., & Weinstock, H. (2013). Sexually transmitted infections among US women and men. *Sexually Transmitted Diseases*, 40, 187-193.

Steinau, M., Unger, E.R., Hernandez, B.Y., Goodman, M.T., Copeland, G., Hopenhayn, C., Cozen, W., Saber, M.S., Huang, Y., Peters, E.S., Lynch, C.F., Wilkinson, E. J., Rajeevan, M.S., Lyu, C. & Saraiya, M. (2013). Human papillomavirus prevalence in invasive anal cancers in the United States before vaccine introduction. *Journal of Lower Genital Tract Disease*, 17, 397-403.

University of Twente. (2017). Health belief model. Retrieved from:

[https://www.utwente.nl/en/bms/communication-theories/sorted-bycluster/Health%20 Communication /Health\\_Belief\\_Model/](https://www.utwente.nl/en/bms/communication-theories/sorted-bycluster/Health%20Communication/Health_Belief_Model/)

Ventola, C. L. (2016). Immunization in the United States: Recommendations, barriers, and measures to improve compliance: Part 1: Childhood vaccinations. *Pharmacy and Therapeutics*, 41(7), 426–436.

Wilson, A. R., Hashibe, M., Bodson, J., Gren, L. H., Taylor, B. A., Greenwood, J., & Kepka, D. (2016). Factors related to HPV vaccine uptake and 3-dose completion among women in a low vaccination region of the USA: an observational study. *BMC Women's Health*, 16, 1–9. <https://doi-org.library.pittstate.edu/10.1186/s12905-016-0323-5>

YourDictionary. (2019). College-aged. Retrieved from:

<https://www.yourdictionary.com/college-aged>



## APPENDIX

## Appendix A:

Pretest –

First initial of mother's first name:

First initial of mother's maiden name:

First initial of your middle name (If none, use X):

First initial of place of birth:

### Increasing Knowledge About HPV and the HPV Vaccine Amongst College Students

#### Demographics:

##### **Gender:**

Male

Female

##### **Ever heard of HPV?**

Yes

No/Do not know

##### **Ever heard of the HPV vaccine?**

Yes

No/Do not know

##### **Has a healthcare provider recommended the HPV vaccine to you?**

Yes

No/Do not know

##### **Have you received at least once dose of the HPV vaccine?**

Yes

No/Do not know

### Human Papillomavirus Knowledge Questionnaire (HPV-KQ)

For each statement, please circle "True" (T), "False" (F), or "I don't know" (DK).

If you do not know, please do not guess, please circle "DK."

	True	False	I don't know
1. HPV is a sexually transmitted infection.	T	F	DK
2. There is a cure for HPV.	T	F	DK
3. Having one type of HPV means that you cannot acquire new types.	T	F	DK
4. There is a screening that is commonly used to test males for HPV.	T	F	DK

5. An abnormal Pap smear may indicate that a woman has HPV.	T	F	DK
6. Most genital HPV infections do not clear up on their own.	T	F	DK
7. A person usually has symptoms when infected with HPV.	T	F	DK
8. HPV is <u>not</u> a very common virus.	T	F	DK
9. HPV infection can cause genital warts.	T	F	DK
10. HPV infection can cause genital herpes.	T	F	DK
11. Certain types of HPV can lead to cervical cancer in women.	T	F	DK
12. HPV can lay dormant in the body for years without symptoms.	T	F	DK
13. A person's chances of getting HPV increase with the number of sexual partners they have.	T	F	DK
14. Most people with HPV have visible signs or symptoms of the infection.	T	F	DK
15. Genital warts can cause cervical cancer.	T	F	DK
16. Condoms are not effective in preventing HPV.	T	F	DK
17. HPV can cause penile cancer.	T	F	DK
18. Nearly all sexually active men and women will contract HPV at some point.	T	F	DK

## Appendix B:

### Posttest–

First initial of mother's first name:

First initial of mother's maiden name:

First initial of your middle name (If none, use X):

First initial of place of birth:

### **If you have not received one dose of the HPV vaccine, do you intend to after the education?**

I have already received at least one dose

Yes

No/Do not know

### **Human Papillomavirus Knowledge Questionnaire (HPV-KQ)**

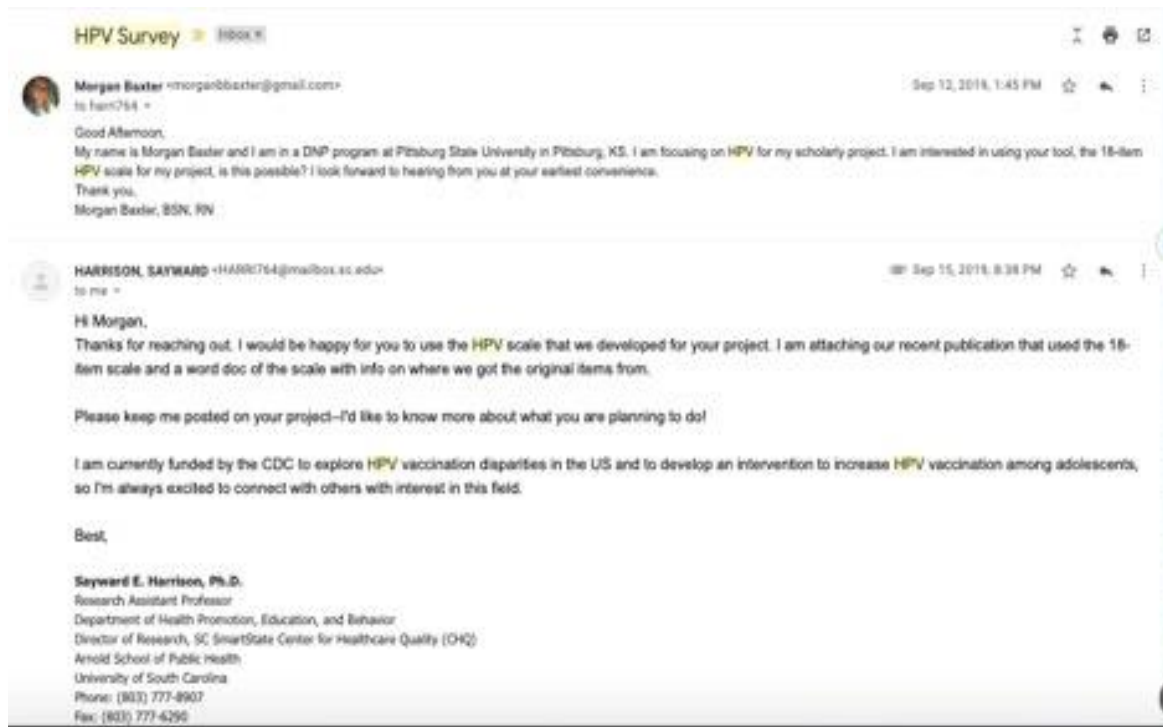
For each statement, please circle "True" (T), "False" (F), or "I don't know" (DK).

If you do not know, please do not guess, please circle "DK."

	True	False	I don't know
1. HPV is a sexually transmitted infection.	T	F	DK
2. There is a cure for HPV.	T	F	DK
3. Having one type of HPV means that you cannot acquire new types.	T	F	DK
4. There is a screening that is commonly used to test males for HPV.	T	F	DK
5. An abnormal Pap smear may indicate that a woman has HPV.	T	F	DK
6. Most genital HPV infections do not clear up on their own.	T	F	DK
7. A person usually has symptoms when infected with HPV.	T	F	DK
8. HPV is <u>not</u> a very common virus.	T	F	DK
9. HPV infection can cause genital warts.	T	F	DK
10. HPV infection can cause genital herpes.	T	F	DK
11. Certain types of HPV can lead to cervical cancer in women.	T	F	DK

12. HPV can lay dormant in the body for years without symptoms.	T	F	DK
13. A person's chances of getting HPV increase with the number of sexual partners they have.	T	F	DK
14. Most people with HPV have visible signs or symptoms of the infection.	T	F	DK
15. Genital warts can cause cervical cancer.	T	F	DK
16. Condoms are not effective in preventing HPV.	T	F	DK
17. HPV can cause penile cancer.	T	F	DK
18. Nearly all sexually active men and women will contract HPV at some point.	T	F	DK

## Appendix C:



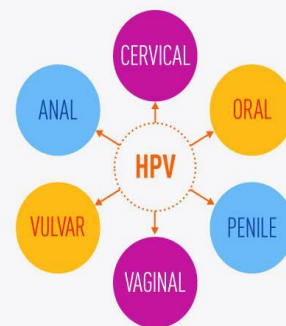
## INCREASING KNOWLEDGE ABOUT HPV AND THE HPV VACCINE AMONGST COLLEGE STUDENTS

Morgan Baxter, BSN, RN  
BSN to DNP  
Pittsburg State University

### WHAT IS HPV?

- Virus that infects epithelial tissues of males and females.
- Can cause warts and several different cancers.
- Can be asymptomatic.
- 80 million people have HPV in the United States.
- Every year 14 million contract the virus
- 4,000 women die every year from preventable cervical cancer.

### HUMAN PAPILLOMAVIRUS CAN CAUSE SEVERAL TYPES OF CANCER



[cancer.gov/hpv](http://cancer.gov/hpv)

**HPV vaccine**  
is **CANCER PREVENTION.**  
[www.cdc.gov/vaccines/teens](http://www.cdc.gov/vaccines/teens)



## WHAT IS THE HPV VACCINE?

- Three different vaccines to date.
- Current vaccine is the Gardasil 9, approved in 2014 and only one used today
  - Protects against HPV types 6, 11, 16, 18, 31, 33, 45, 52, and 58.
- Recommended for people between the ages of 9 to 26.
- 2 or 3 doses of vaccine to be fully protected depending on age of initial vaccination
- Healthy People 2020 goal is 80% HPV vaccination

## HPV KNOWLEDGE

- Is HPV a sexually transmitted infection?
- Is there a cure for HPV?
- If you have one type of HPV can you acquire a different type?
- Can males be screened for HPV?
- Can an abnormal pap smear indicate a woman has HPV?
- Do most HPV infections clear up on their own?
- Does a person have symptoms when infected with HPV?
- Is HPV a common virus?
- Can HPV cause genital warts?

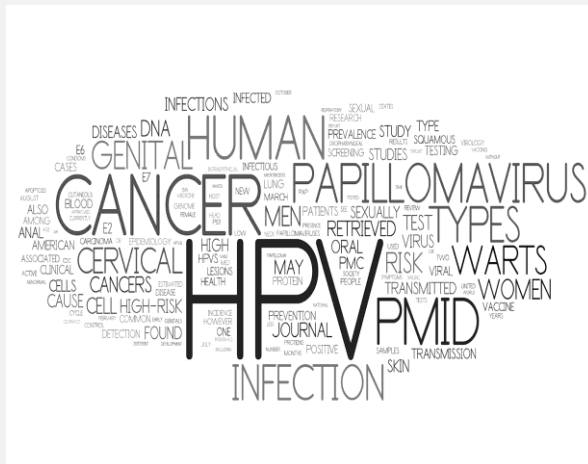
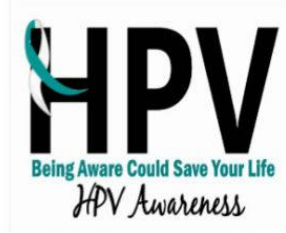


**WE CAN  
ELIMINATE  
HPV**  
RELATED CANCERS



## HPV KNOWLEDGE

- Can HPV cause genital herpes?
- Can certain types of HPV lead to cervical cancer in women?
- Can HPV lay dormant in the body for years without symptoms?
- Does the chances of contracting HPV increase with the number of sexual partners they have?
- Do most people have visible signs or symptoms of the infection?
- Can genital warts cause cervical cancer?
- Can condoms prevent HPV?
- Can HPV cause penile cancer?
- Is it true nearly all sexually active men and women will contract HPV at some point?



## SUMMARY

- HPV IS PREVENTABLE
- Vaccine available, most insurances covered.