

PARENTAL EDUCATION AND HPV VACCINATION INTENT

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PARENTAL EDUCATION AND HPV VACCINATION INTENT: PARENTAL  
EDUCATION

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### **Abstract**

The human papillomavirus (HPV) is responsible for 99% of cervical cancers and many other cancers, including vulvar, vaginal, oropharyngeal, anal and penile. An HPV vaccine was introduced in the United States in 2006, and is now recommended for males and females nine to 26 years of age. The vaccine has been shown to be both safe and efficacious. Despite this, HPV vaccination rates remain low in the United States. According to the Centers for Disease Control and Prevention only 60% of females and 56% of males age nine to 17 years old have initiated the two- to three-dose series. The purpose of this project was to evaluate parental intent to vaccinate and vaccine uptake in age-appropriate children who have not received the HPV vaccine after brief educational intervention on HPV and HPV vaccine. A county health department in the Midwest region of the United States was the site for this educational project with a convenience sample of 20 individuals. Two registered nurses were educated on the project and were given a script, which highlighted the key points of an educational pamphlet from the CDC on the HPV virus and vaccination to review with parents. The outcomes were evaluated using the same three questions pre- and post-test. By providing education about the human papillomavirus to parents and increasing awareness regarding the importance of vaccination, the author anticipated increased intent to vaccinate and improved vaccination uptake within the participants. The pre-test indicated half of the parents surveyed believed HPV to be the most prevalent sexually transmitted infection, while the remainder did not believe it was the most common infection. Most parents did feel the vaccine was safe and effective. The same number of parents were planning on vaccinating their children against HPV. The post-test demonstrated slightly more parents believed that HPV was the most common disease after the educational intervention. After the educational intervention there was also a slight increase in parents that believed the vaccine

to be safe and planned on vaccinating their child. The author anticipated a more robust increase in both knowledge and intent to vaccinate after the educational intervention. In analyzing both the pre-test and post-test it appeared the majority of parents surveyed had knowledge of the vaccine and believed the vaccine to be safe prior to participating in the survey. Fewer parents were unaware that HPV is the most common sexually transmitted infection.

*Keywords:* human papillomavirus, HPV, HPV vaccine, vaccine uptake, intent to vaccinate

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## Parental Education and HPV Vaccination Intent

### **Statement of the Problem and Significance**

In 2006, the United States Food & Drug Administration (FDA) licensed the first vaccine aimed at preventing cervical cancer. Currently, cervical cancer is the third most frequently diagnosed gynecological cancer in the United States. Human papillomavirus (HPV) types 16 and 18 are responsible for 70% of cervical cancers. Ninety-nine percent of cervical cancers are caused by persistent high-risk HPV infections. The HPV is also associated with other types of cancers, including: vulvar, vaginal, oropharyngeal, anal, and penile cancer (American Cancer Society [ACS], 2014). Healthy People 2020, national objectives for improving health of all Americans, set a goal of 80% of adolescent females age 9 to 15 years initiating the HPV vaccine series (U.S. Department of Health and Human Services, n.d.).

The HPV vaccine has proven to be both safe and efficacious. Despite this, vaccination rates remain low in the United States and even lower in Kansas (Chilson, 2018). According to the Centers for Disease Control and Prevention (CDC, 2013), the completion rates for the HPV vaccine series were low with 32% of boys age 13- to 17-years-old, and 43% of girls 13- to 17-years-old finishing the series. The statistics in Kansas demonstrated even lower completion rates. In Franklin and Miami counties (in northeast Kansas), 7% of all nine- to 18-year-old individuals have completed the two- to three-dose series. The rates are similar in the neighboring counties of Douglas and Johnson counties, where 8% of nine- to 18-year-old individuals have completed the series (Kansas Foundation for Medical Care, Inc., 2014).

According to the CDC (2013), the human papillomavirus is the most common sexually transmitted infection in the United States. The National Cancer Institute (NCI, 2012) estimates that over half of sexually active individuals will develop a HPV infection during their lifetime.

Approximately 99.7% of cervical cancers are caused by persistent high-risk HPV infections. There are fifteen known oncogenic, or cancer causing, types of the human papillomavirus, with types 16 and 18 accounting for 70% of cervical cancers. The economic burden of cervical cancer in the United States in 2010 was over eight billion dollars (NCI, 2012). Currently there are two HPV vaccines available in the United States. Both vaccines include protection from types 16 and 18. By improving vaccine rates for the human papillomavirus, cervical cancer rates are predicted to significantly decrease, as would rates for other cancers caused by the virus in both males and females.

### **Purpose Statement**

The economic burden for treating cervical cancer in the United States in 2010 was over eight billion dollars (NCI, 2012). Currently there are two vaccines available in the United States and all three include protection from types 16 and 18. By improving vaccine rates for HPV, cervical cancer rates are predicted to significantly decrease, as are the rates for other cancers caused by the virus in both males and females.

The project PICO question: “Does education of parents of adolescents age 9 to 17 years about the human papillomavirus and HPV vaccination increase the intent to vaccinate their children against HPV compared to those parents who have not received the educational intervention?” Parents of adolescents, both males and females, age 9 to 17 years were targeted, as children under 18 years old require parental consent for vaccination.

The purpose of this project is to increase HPV vaccine intent in parents of age-appropriate children that have not received the HPV vaccine and increased uptake of the vaccine for those children. A brief educational intervention for parents on HPV and the HPV immunization will increase knowledge. Parents of children age 9-17 that are unvaccinated

against HPV would be identified at the Franklin County Health Department when seeking mandatory immunizations required by the educational system. A brief, three-question pretest would be given, followed by receiving the educational pamphlet from the CDC, *HPV Vaccine for Preteens and Teens*. A registered nurse would review the key components of the pamphlet with the parent using a provided script. The same three-question test would be administered post-intervention to evaluate change in knowledge and intent to vaccinate. This project was a small pilot project within Franklin County, Kansas, where HPV vaccine rates are among the lowest in the state. The project was an educational intervention that established an evidenced-based protocol to improve intent to vaccinate.

If this pilot project was successful in improving intent to vaccinate and vaccine uptake, the educational intervention could be broadened as routine protocol within the county's health department and shared with other health departments within the state. The ultimate, long-term goal of the project would be increased vaccine uptake rates within the county. Decreasing the incidence of HPV infection and sequelae would improve the overall health of the population, and decrease the economic burden on the community it was, with costs including: copying or reproducing the educational pamphlet provided by the CDC, and minimal time and cost to educate staff. It would be low cost. The project may be easily reproducible for other public and private clinics.

### **Concepts and Variables**

The Health Belief Model guided this project. Croyle (2005) describes the Health Belief Model as assessing a health-related concern and identifying a need for change in that health behavior (See Figure 1). Once the need is assessed and risks of not changing the pattern of behavior are identified, this information is communicated to the targeted population along with



steps recommended to change behavior. The health care provider identifies any barriers to change and assists with removing or reducing the perceived barriers. The health care provider assists by providing skill development and support. Through this process, self-efficacy is improved, thereby increasing the likelihood of successful change.

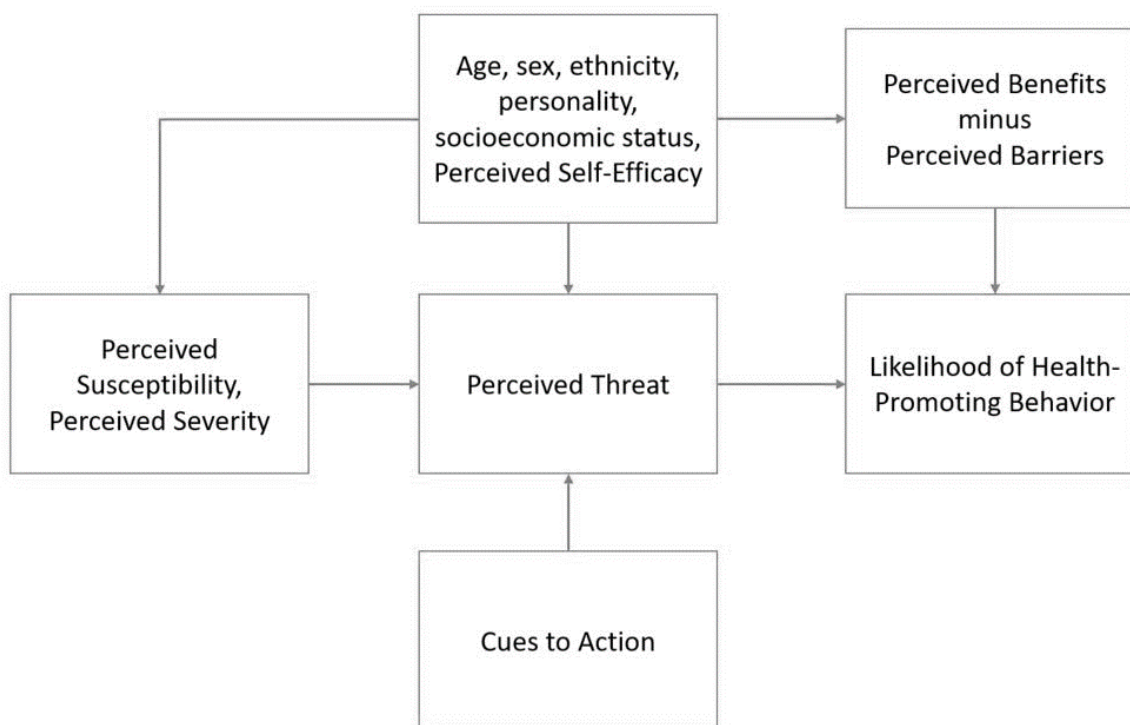


Figure 1. Health Belief Model. Adapted from Croyle, R.T. (2005). *Theory at a Glance: Application to Health Promotion and Health Behavior*, 2<sup>nd</sup> edition. U.S. Department of Health & Human Services: Washington, D.C.

Utilizing the Health Belief Model, parents were educated about their child's susceptibility to HPV, the severity and consequences of HPV infection, the benefits of vaccine uptake, and relatively low cost of the vaccine which was predicted to improve vaccine uptake. Assistance was provided by answering questions, providing information about programs to assist with payment for vaccine if their child was not insured and having the vaccine immediately available if immunization requested at time of study. These steps lowered barriers to vaccine uptake.

Concepts and variables of interest include parental education and intent to vaccinate. Education of parents was provided by both a written brochure reinforced with a scripted review of key highlights of the review. Intent to vaccinate was assessed before and after the educational intervention. Outcome concepts were intent to vaccinate following the educational intervention. The operational measurement of the concepts would include improved scores following the educational intervention, measured by increased intent to vaccinate within Franklin County, Kansas.

## **Literature Review**

### **Overview of Literature Search**

A comprehensive literature review was performed using PubMed, CINAHL® and the Cochrane Database of Systematic Reviews. A search of keywords included: “parental education”, “educational intervention”, “HPV vaccination”, “HPV vaccination initiation”, and “paternalistic decision-making”. Articles were limited to those written in English and published in the past five years. All educational interventions were included. Articles excluded were those with educational interventions for patient 18 years of age and older.

### **Review and Synthesis of Articles**

After reviewing the current literature, several themes resonate, which include the following:

- 1) The educational needs of parents, adolescents and health care providers must be addressed;
- 2) Adolescent decision-making should be reviewed and included in prescribed interventions;

- 3) Health care providers should be forth coming with information about HPV infection and vaccination; and
- 4) A variety of educational interventions could be employed to increase intent to vaccinate and actual vaccine uptake.

The themes will now be reviewed with more depth to provide understanding and background for this project.

### **Educational Needs**

Kester, Sheed-Steele, Dotson-Roberts, Smith, and Zimet (2014) and Kowalczyk et al. (2013) found a need to increase awareness of HPV disease, including transmission, prevalence, and consequences of HPV infection, among adolescents and parents. Kowalczyk Mullins, et al. (2013) also cited a need for education on vaccine safety and efficacy. Hendry et al. (2013) came to the same conclusion regarding lack of knowledge regarding HPV and vaccine, but went on further to conclude that this lack of knowledge was so poor that it impeded the parent's ability to make informed choices about vaccination and ultimately impacted cervical cancer screening behaviors. Holman, Bernard, Roland, Liddon, and Stokley (2014) performed a systematic review to assess knowledge and barriers to HPV vaccine uptake. In the review, parents cited lack of information, concerns about vaccine safety and efficacy and low perceived risk of HPV infection as reasons to decline vaccination.

Three additional articles (Guerry et al., 2011; Allen, Othus, & Shelton, 2010; & Spleen, Kushman, Lark, Digman, & Lengerich, 2012) also cited a profound need to educate adolescents, parents and health care providers on HPV disease as well as HPV vaccine safety and efficacy. Allen et al. (2010) identified a need to explore educational needs among different ethnic groups and possibly target educational strategies differently to among ethnic subgroups.

### **Adolescent Decision-Making**

Kowalczyk Mullins et al. (2013) conducted 33 interviews with adolescent girls age 11-12 years old and their adult, female primary caregiver. The study identified that parents are an important source of information for girls; therefore, clinicians need to provide parents with education focused on HPV disease and prevention while encouraging parents to engage in discussions about this topic with their children. Guerry et al. (2011) and Allen et al. (2010) conducted surveys to assess knowledge regarding HPV disease and vaccine. Both groups found adolescents with very limited knowledge of HPV and HPV vaccine. The authors also identified parents as an important information source for adolescents and recommended targeting education to parents, so the parents would be equipped to address adolescent concerns and questions about HPV disease and vaccine. Kester et al. (2014) performed a randomized survey of 131 young adults and concluded that there continued to be a low awareness of HPV disease and vaccine benefits.

Emotions and peer reaction play an important role in adolescent decision making (Blakemore & Robbins, 2012; Chang et al., 2018; Grandahl et al., 2018). Factors such as fear of needles and fear of pain should be addressed when counseling adolescents regarding HPV vaccination. Chang et al. (2018) addressed the need for teens to participate in the decision making for HPV vaccination, citing the importance of autonomy for adolescents.

### **Health Care Provider Recommendations**

Parents consistently report health care provider recommendations as the most important factor in the decision to vaccinate against HPV (Guerry & DeRosa, 2011; Holman et al., 2014; Thavarajah, Chow, & Arocha, 2015; Dorell, Yankey, Kennedy, & Stokley, 2013; Trim, Naushin, Elit, & Roy, 2012; Allen et al., 2012). Provider trust and positive attitude when presenting

information regarding the HPV vaccination were also identified as important (Tharavarajah et al., 2015). In contrast, Spleen et al. (2012) and Javanbakht et al. (2012) recommended a community-based approach to intervention citing that community stakeholders are committed to prevention of a disease that disparately affects their community. Javanbakht et al. (2012) identified the preferred information source for parents was a peer and recommended interventions that incorporated the use of “promotaras” or peer liaisons between health organizations and the community. These same investigators identified a need for more research targeting a variety of ethnic and culturally diverse groups.

### **Educational Interventions to Increase Vaccine Uptake**

The information provided to both adolescents and their parents must be balanced, clear and concise (Wegwarth, Kurzenhauser-Carstens, & Gigerenzer, 2014). Parents must be educated not only regarding HPV and vaccine, but also on how to engage in discussions about these topics with their children (Kowalczyk et al., 2013). A variety of interventions have been researched including mother-daughter dyads (Winer et al., 2016), programs focused on provider education promote the HPV vaccination (Fuller, 2017), and designing interventions based on domains of interest (Foley et al., 2015). The educational interventions employed did improve vaccine uptake in these studies. Fu, Bonhomme, Cooper, Joseph & Zimet (2014) performed a systematic review on educational interventions to increase HPV vaccination acceptance. The authors found that although educational interventions did improve vaccine acceptance and uptake, there was not strong evidence to recommend any one specific intervention.

### **Conclusion**

There are many consistencies in the literature reviewed regarding HPV vaccination and decision-making. It is apparent through the literature review that there is a need for ongoing

education for parents, adolescents and health care providers on HPV infection and vaccine safety and efficacy. Parents gain most of their information regarding HPV from both their health care provider and peers in the community. Adolescents, in contrast, receive their information regarding HPV from their parents. Education provided must be clear and concise as it has a trickle-down effect. Health care providers must have and provide accurate information to parents so that parents can provide accurate information to their children and peers in the community. The key to accurate information and understanding of the HPV infection and HPV vaccine is education.

The current literature has focused primarily on barriers to HPV vaccine uptake, especially educational barriers. Fewer articles evaluated specific educational interventions for parents and adolescents that are effective in promoting HPV vaccine uptake. There is a definite need for additional research on specific educational interventions and their effectiveness in promoting HPV vaccination uptake and overall HPV knowledge. Research on effective educational interventions would hopefully identify specific interventions that could be promoted universally. Additionally, research needs to be conducted targeting a variety of ethnic and culturally diverse groups. The majority of the current literature focuses on vaccination of females, but research is needed that includes interventions with males.

## **Methods**

### **Approach**

The purpose of the project was to increase parental knowledge of HPV and the HPV vaccine to increase intent to vaccinate and actual HPV vaccine uptake, thus improving patient outcomes by impacting the numbers of individuals immune to the HPV virus. The project aimed to improve the HPV vaccination process within the county health department by intervening with

a brief educational tool. The project was evaluated by the Human Subjects Committee and received expedited status as an educational intervention.

The steps within the project included the following: (1) identify a concern, need, or opportunity; (2) assess for need or opportunity; (3) plan development; (4) execute project; and (5) assess to see if improvements are needed. In the case of this project, the concern was low HPV vaccination rates. The second step was assessing for need or opportunity. The opportunity identified for the project was the opportunity to provide education to parents already at the county health department with their children for school-required immunizations. Next, a plan was developed to provide an educational pamphlet and provide additional information through a script highlighting key points of the pamphlet. Finally, the project was executed and assessed to see if improvements are needed.

### **Author's Assumptions**

For this project, the author assumed that increased parental knowledge regarding HPV would result in increased desire for the parents to vaccinate their children. An assumption for improved outcomes in healthcare is that health care providers are willing and have the desire to educate their clients. In this project, the author assumed that the nurses providing the educational intervention have the desire to increase the client's knowledge. Another assumption of the project is that the parents want to be more educated regarding HPV and the vaccine. Healthcare improvement assumes that making a change in the delivery process, such as providing education, will result in improved patient outcomes, such as improved vaccination rates.

### **Project Design**

This project included an educational intervention. The design for the project was to provide a script to the registered nurses working at a local health department highlighting key

points of the CDC pamphlet, *HPV Vaccine for Preteens and Teens* (CDC, 2013). This pamphlet, which is an evidenced-based one-page pamphlet, described the following: a) importance of vaccination, b) when children should be vaccinated, c) why children should get the HPV vaccine, d) safety and efficacy of the vaccine and e) possible side effects. The pamphlet also discussed the Vaccines for Children program and where a parent could get more information regarding the program. The parents would be given a three-question pretest while waiting to be taken back to the room. Once in the room, the registered nurse read the highlights of the pamphlet to the parent. The script was directly from the pamphlet itself, reinforcing information contained within it. The parents were then given the same three questions as a posttest and given an opportunity to have the HPV vaccine given to their child in addition to the vaccines for which they presented. The pre- and posttests were collected and evaluated for knowledge improvement and the impact of the educational intervention on the intent to vaccinate. The project design is simple and straightforward; therefore, the project could be easily replicated in other public and private health care facilities. The number of subjects was chosen to keep the pilot project achievable in a one-month time frame, yet provide adequate information regarding the results.

### **Project Sample**

The population sample was from Franklin County, Kansas, which has a population of 25,740 (US Census Bureau, 2013). More specifically, the sample was pulled from the Franklin County Health Department located in Ottawa, Kansas, population 12,482 (US Census Bureau, 2013). The Franklin County Health Department is the only location within the county that provides vaccinations.

The project sample included twenty parents of children ages nine to 17 years who have not received the HPV vaccination. The parents presented with their child(ren) to the health



department for routine school-required vaccines, which routinely included DTap and meningococcal vaccinations for children between eleven and twelve years of age.

### **Data Collection Methods**

A three-question pretest (see Appendix A) was administered followed by a brief scripted educational intervention by a Registered Nurse highlighting key points of an educational brochure. The same three-question posttest (see Appendix B) followed the brief educational intervention. Both the pretest and posttest were printed on paper and contained “yes/no” questions. The questions were based on teaching/learning objectives and parental intent to vaccinate. The questions for the pre- and posttest and the CDC brochure, *HPV Vaccine for Preteens and Teens*, were reviewed by a doctorally-prepared faculty member at the University of Kansas School of Nursing with expertise in women’s health, midwifery, and family medicine. Demographic data collected was minimal, only identifying an age range and gender of the parent.

### **Human Subjects Protection**

This project was designated as an exempt study by the University of Kansas Medical Center Institutional Review Board/Human Subjects Committee. Participants were recruited for inclusion in the study and signed a consent form prior to participation (see Appendix C). Results of the surveys were not linked to the signed consent forms.

### **Procedure**

The full-time Registered Nurses (RNs) at the Franklin County Health Department were provided education regarding the project, purpose, and objectives by the project director in a twenty-minute presentation the week prior to initiation of the project. The RNs were given a

script to present to parents highlighting the key points of an educational brochure from the CDC entitled *HPV Vaccine for Preteens and Teens* (see Appendix D).

When parents of age-appropriate children who had not received the HPV, vaccine arrived at the health department for other school-required vaccines, the receptionist asked if they were willing to participate in the study. The receptionist provided the parent with the consent form, pre-test, and the educational pamphlet. The parents completed the consent form and the pre-test in the waiting room while waiting to be called back to the immunization room.

While in the immunization room, the RN collected the completed consent form. The RN then reviewed the highlights of the pamphlet from a script and had the parent complete the identical posttest. The RN collected the pre-test and posttests from the parent and placed the tests in a collection box located in the room. The RN then offered the HPV vaccine to the parent and administered the vaccine if the parent requested it be given.

The project director collected the pre- and posttests on a weekly basis until 20 sets were completed. The pre-test and post-test were paired with a de-identified number, placed on the tests prior to administration.

### **Data Analysis**

The pre- and posttests were compared looking specifically for increase in knowledge of HPV prevalence, safety and efficacy of the HPV vaccine, and intent to vaccinate. For this study, attitudes about choosing or not choosing to vaccinate were not collected. Intent to vaccinate was evaluated in the project, but not the actual number of parents that consented to vaccination on the day the surveys were administered.

## Results

The project was completed between June 11, 2018, through August 1, 2018. Most of the surveys ( $n = 15$ , 75%) were completed by mothers, with the remainder of the surveys ( $n = 5$ , 25%) were completed by fathers. The parents were all between the ages of 20 and 60 years, with half between the ages of 31-40 years ( $n = 10$ ). See Table 1 for demographic information about the sample.

Table 1

*Demographics of Sample*

	<i>n</i>
Gender	
Male	5
Female	15
Age	
20-30 years old	1
31-40 years old	10
41-50 years old	4
51-60 years old	4
Over 60 years old	1

The results of the pretest indicated half of the parents believed HPV to be the most common sexually transmitted infection while the other 50% did not believe it was the most common infection. The majority of parents ( $n = 16$ , 80%) did feel it was a safe vaccine, however four parents did not believe the vaccine to be safe and effective (20%). The final question of the pretest also indicated that most parents were planning on vaccinating their children against HPV ( $n = 16$ , 80%), with four parents choosing not to vaccinate (20%).

The posttest results demonstrated slightly more parents ( $n = 12$ , 60%) believed that HPV was the most common sexually transmitted infection after the educational intervention. Four parents (20%) continued to believe it was not the most common. Regarding the safety of the HPV vaccine, 18 parents thought the vaccine was safe on the posttest (90%) with two parents not believing the vaccine was safe (10%). Finally, 18 (90%) of the parents were planning on giving the HPV immunization to their children after the educational intervention and two (10%) parents continued to indicate they would not vaccinate their child against HPV. See Table 2 for results of pretest and posttest responses.

Table 2

*Pretest and Posttest Comparisons*

	Pretest	Posttest	Change
	<i>n</i>	<i>n</i>	(%)
Question 1: 1. Do you think the genital wart virus, HPV, is the most common infection caused by sexual contact?			
Yes	10	12	20
No	10	8	- 20
Question 2: 1. Do you think the HPV vaccine (shot) is safe for your child and works well?			
Yes	16	18	12.5
No	4	2	- 50
Question 3: 1. Do you plan on vaccinating your child against HPV?			
Yes	16	18	12.5
No	4	2	- 50

Comments on the open-ended posttest response requesting why the parent was not vaccinating today and/or not vaccinating at all were also reviewed. Those comments included: “have received conflicting information about the safety of the vaccine”, “want to do more research on the vaccine before getting for my child”, “would like to see more longitudinal data about vaccine”, and “hasn’t been out long enough”.

### **Conclusions**

The posttest indicated a modest increase (10%) in knowledge of HPV and belief in the safety of the vaccine after the educational information was presented to the parents. There was also a modest increase (10%) in intent to vaccinate after the intervention.

The author anticipated a more robust increase in both knowledge and intent to vaccinate after the educational intervention by the RN. There are several possible conclusions from the survey results including population bias, ineffective educational intervention, and knowledge base of the parents surveyed. The population may be biased as they are presenting to the health department seeking vaccination(s) for their child. Therefore, no parents that are generally opposed to vaccinations were included in the study. The health department is located directly next to the largest group of health care providers in the county and much of that patient population receive vaccinations at the Franklin County Health Department. An assumption could be made that many of the parent(s) and child(ren) are receiving regular health care and are more apt to have had the HPV vaccination recommended to them by their health care provider. It is also possible that many of the parent(s) and child(ren) not receiving any or regular health care might not have been included in the convenience sample obtained.

There are many outside influences that could have impacted the project, including the possibility that the parent was in a hurry to be done or perhaps distracted by events of the day.

Another possibility would be that the parent had already set views on HPV and the HPV vaccination and were not open to receiving new information.

In analyzing the pretest, it appears the convenience sample had knowledge of HPV and the vaccination prior to the intervention and were also planning on their child receiving the HPV immunization. In the convenience sample obtained, sixteen of the twenty parents surveyed felt the vaccine was safe and were planning on vaccinating their child. This impacted the project as there were fewer parents to expose to new and(or)correct information during the educational intervention.

An area that needs more educational intervention was general knowledge about HPV, including the incidence and prevalence of the disease. In the pretest, only half of those surveyed thought that HPV was the most common sexually transmitted infection. After the intervention, there was a slight change in the results with twelve parents (60%) acknowledging HPV as the most common STI, and eight parents still not recognizing this.

### **Discussion**

After completing the project, the author found many of the conclusions in the literature to be consistent with this study. The project identified a need for more education regarding HPV infection, particularly incidence and prevalence. Most of the sample for the project believed in the safety and efficacy of the vaccine which contrasted with the literature where many parents were unsure of the safety and efficacy of the vaccine. The author was pleased with the number of parents that intended to vaccinate against HPV, but at the same time was also confused considering a smaller number of parents surveyed believed HPV was the most prevalent STI. The author anticipated more resistance for the vaccine due to beliefs the vaccine would promote sexual behavior and belief regarding the safety and efficacy of the vaccine.

The author has several recommendations after completing the educational intervention and comparing the pre-and posttest performance. The first recommendation would be to access parents in a different setting such as “Back to School” nights or pre-registration at the local schools. This access point would possibly capture the population needing the educational intervention. The pilot study for the educational intervention did not capture many of those parents that were questioning the safety, efficacy, and importance of the HPV vaccination.

Another recommendation would be to change the educational intervention to make it more interactive with both the parent and the child. Engaging both participants is important for the parent and child to buy into the message given.

The educational intervention did have a positive outcome, though not as dramatic as anticipated. With a few modifications, the intervention could be incorporated in the surrounding county health departments with very minimal expenditure of cost or time.

### **Implications for Practice**

The need for continued, ongoing education of health care providers, staff, parents and teens regarding all aspects of HPV and the HPV vaccine is important for practice. The review of the literature for this project identified a need to explore the educational needs and methods among a variety of community settings and among a variety of ethnic groups. One specific educational intervention did not stand out as best, thus recognizing the diversity of the general population that may require a variety of educational styles and interventions.

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**Appendix A**  
**Pre-Test Questionnaire**

Male \_\_\_\_\_

Female \_\_\_\_\_

20-30 years old \_\_\_\_\_

41-50 years old \_\_\_\_\_

Over 60 years old \_\_\_\_\_

31-40 years old \_\_\_\_\_

51-60 years old \_\_\_\_\_

1. Do you think the genital wart virus, HPV, is the most common infection caused by sexual contact?

Yes \_\_\_\_\_

No \_\_\_\_\_

2. Do you think the HPV vaccine (shot) is safe for your child and works well?

Yes \_\_\_\_\_

No \_\_\_\_\_

3. Do you plan on giving your child the HPV shot?

Yes \_\_\_\_\_

No \_\_\_\_\_

**Appendix B**  
**Post-Test Questionnaire**

1. Do you think the genital wart virus, HPV, is the most common infection caused by sexual contact?

Yes \_\_\_\_\_

No \_\_\_\_\_

2. Do you think the HPV vaccine (shot) is safe for your child and works well?

Yes \_\_\_\_\_

No \_\_\_\_\_

3. Do you plan on vaccinating your child against HPV?

Yes \_\_\_\_\_

No \_\_\_\_\_

If you do not plan on vaccinating your child, please tell us why. If you plan on vaccinating your child against HPV later, please let us know why you are not vaccinating today.

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**Appendix C**  
**Letter to Participants**

Dear Participant,

My name is Patricia West, APRN. I am currently working on my Doctorate of Nursing Practice (DNP) at the University of Kansas. I am working very closely with Dr. Cara Busenhart ([cbusenhart@kumc.edu](mailto:cbusenhart@kumc.edu)) and Dr. Karen Trees ([ktrees@kumc.edu](mailto:ktrees@kumc.edu)) in order to complete my DNP project. You are being asked to take part in the study because you have a child between the ages of 9-17. The main purpose of the study is to create new knowledge for the benefit of future patients and society in general regarding the human papillomavirus (HPV) and the HPV vaccine.

Your participation will involve completing a pre- and post-educational questionnaire type survey. This survey will be administered, followed by a short educational intervention highlighting the key points from an educational brochure presented by a registered nurse at the FCHD. Following the educational services, you will be provided with a post-educational survey and then offered the vaccine. The responses to the surveys are not timed. All FCHD English speaking clients who have children seeking vaccination between the ages of 9 and 17 and do not require a surrogate or interpreter are eligible to participate. Once the study is completed the data will be compiled and interpreted for future recommendations. You can ask questions at any time during the study. The researchers will tell you if they receive any new information that might cause you to change your mind about participating.

The research study will take place at the Franklin County Health Department with Patricia West, APRN as the researcher. Approximately 20 plus people will be participating in the study which will take about 15 minutes of your time to complete.

I thank you in advance for your participation.

Sincerely,  
Patricia West, APRN

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Signature of Participant

Date & Time

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Signature of Person Obtaining Consent

Date & Time

## Appendix D CDC Brochure

# HPV Vaccine for Preteens and Teens

HPV vaccination is recommended at ages 11-12 to protect against cancers caused by HPV infection.

Why does my child need HPV vaccine?

When should my child be vaccinated?

**Human papillomavirus (HPV) vaccine protects against cancers caused by HPV infection.**

HPV is a common virus that infects teens and adults. About 14 million people, including teens, become infected with HPV each year. HPV infection can cause cervical, vaginal, and vulvar cancers in women and penile cancer in men. HPV can also cause anal cancer, cancer of the back of the throat (oropharynx), and genital warts in both men and women.

**All kids who are 11 or 12 years old should get two shots of HPV vaccine six to twelve months apart.** Getting vaccinated on time protects preteens long before ever being exposed to the virus. People get HPV from another person during intimate sexual contact.

Some children may need three doses of HPV vaccine. For example, adolescents who receive their two shots less than five months apart will need a third dose for best protection. Also, children who start the vaccine series on or after their 15th birthday need three shots given over 6 months. If your teen hasn't gotten the vaccine yet, talk to his/her doctor about getting it as soon as possible.

The best way to remember to get your child all of the recommended doses is to make an appointment for the remaining shots before you leave the doctor's office or clinic.

**HPV vaccination provides safe, effective, and long-lasting protection against cancers caused by HPV.** HPV vaccine has a reassuring safety record that's backed by 10 years of monitoring and research.

Like any vaccine or medicine, HPV vaccination can cause side effects. The most common side effects are mild and include pain, redness, or swelling in the arm where the shot was given; dizziness, fainting, nausea, and headache. Fainting after any vaccine, including HPV vaccine, is more common among adolescents.

To prevent fainting and injuries related to fainting, adolescents should be seated or lying down during vaccination and remain in that position for 15 minutes after the vaccine is given. The benefits of HPV vaccination far outweigh any potential risk of side effects.

It is important to tell the doctor or nurse if your child has any severe allergies, including an allergy to latex or yeast. HPV vaccine is not recommended for anyone who is pregnant.

**The Vaccines for Children (VFC) program provides vaccines for children ages 18 years and younger, who are uninsured, Medicaid-eligible, American Indian or Alaska Native.**

Learn more at [www.cdc.gov/Features/VFCprogram](http://www.cdc.gov/Features/VFCprogram)

Is HPV vaccine safe for my child?

How can I get help paying for these vaccines?

## Where can I learn more?

Talk to your child's doctor or nurse to learn more about HPV vaccine and the other vaccines that your child may need. You can also find out more about HPV vaccine at <http://www.cdc.gov/hp>