Evaluating Effective Messaging for HPV Vaccination Promotion

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Abstract

Introduction

The Human Papilloma Virus (HPV) vaccination has caused great controversy regarding the perceived message of sexuality parents believe it portrays to their children. In response, educational and promotional documents were created to inform the public on its benefits and increase the vaccination rates. Concerning trends in the HPV vaccine series completion rates have been noted among minority and poverty status individuals. Likewise lower initiation rates of the HPV vaccine series compared to other routine adolescent vaccinations has also been noted.\(^1\) In February 2014, the President’s Cancer Panel called for a coordinated effort to address these concerning trends in HPV vaccination to increase the rates of the vaccination series completion.\(^2\) As a result of this call we developed the quality initiative, “Evaluating Effective Messaging for HPV Vaccination Promotion”. A prior project, “Evaluating Effective Messages for Vaccination Promotion”, which looked at promotional efforts for the MMR vaccine, was used as the model for this quality initiative.\(^3\)

Methods

Focus groups and individual sessions were held at Central Mississippi Health Center in Jackson, MS to gain insight on how to potentially better educate the public on the topic. Four commonly used public health strategies to promote vaccinations were examined:

1) Presenting facts about disease risks and prevention,
2) Correcting misinformation,
3) Using dramatic narratives, and
4) Displaying visuals of the risks.

Results
1. There were 21 participants: all were African American, 2 were eligible to receive the vaccination, 15 were parents and 4 were grandparents.
2. More than 70% of the participants reported that reading each of the four documents would make them more likely to obtain the vaccination for themselves, their child or grandchild. There were variations in the best document chosen.
3. A combination of the documents will enhance the promotional effort.
4. Promotional efforts should include the message that obtaining the vaccination will prevent cancer and help children live longer, more successful lives.
5. Promotional efforts should include churches, health fairs and schools.

Conclusions
It was concluded that the current documents used to promote the HPV vaccination are adequate, but can be improved by incorporating at least 2 of the health promotional strategies into a single document. It was also concluded that promotional efforts should be expanded to include a larger variety of locations including churches, schools and health fairs.

Keywords:
Human Papillomavirus, HPV, vaccine, health promotion, public health awareness strategies, sexually transmitted infections, focus groups and individual sessions.
**Introduction**

Sexual health, adolescent health, women’s health and health disparities are topics that have been growing areas of interest for me. While in graduate and medical school, I have tried to learn more about the topics and implement programming to gain more experience in those areas. This particular topic was undertaken after a faculty mentor at school advised me of the current literature surrounding the HPV vaccination and the need for investigating how to better promote the vaccine. After learning of the health disparity of the vaccination series among African Americans, I thought Central Mississippi Health Service would be the perfect place to conduct this project, considering that most of their patient base is African American. I held focus groups and individual sessions with patients and the health center staff to: 1) Learn the most effective/preferred promotional message out of four current educational documents regarding the HPV vaccination, 2) Gain insight on how to better educate the public about the HPV vaccination, 3) Report the findings to Central Mississippi Health Service, to allow them to develop effective brochures and increased the rates of HPV vaccinations in their clinics.

**Background**

Human Papilloma Virus has over 100 subtypes, but there are a few that are known to be high risk for genital warts and cervical cancer. The strains for genital warts are 6 and 11, while those for cervical cancer are 16 and 18. These four strains have a vaccine to prevent them, Gardasil, which can be administered to boys, ages 11-26 and girls, ages 9-26. Another vaccine, Cervarix, is the vaccine that reduces the risk for being infected with strains 16 and 18. These 2 HPV vaccines prevent the 2 types of HPV that cause 70% of all cervical cancer. Even with this strong medical evidence, in the United States only 1/3 of adolescent girls and less than 7% of boys have completed the HPV vaccine series. ²
There is great controversy regarding the message these vaccines are portraying to children and young adults when obtaining the vaccination, and thus has prevented some parents and grandparents from having the vaccination administered to children. In previous research, there has been evidence that promotional messages for obtaining vaccinations have been ineffective for increasing rates of MMR vaccines. As a result, this project was undertaken to learn what the target population thinks about the current educational materials about the HPV vaccine and how we can develop more effective educational materials to increase the likelihood that they will obtain vaccinations. The HPV vaccination is done in a series of three shots over the course of six months. There have been many concerning trends in the HPV vaccine series completion including disparities noted among racial/ethnic and poverty status individuals. Likewise, there are lower initiation rates of HPV vaccine series than other routine adolescent vaccinations. In February 2014, the President’s Cancer Panel called for a coordinated effort to address these concerning trends in HPV vaccination to increase the rates of vaccination completion. The report also called for health care providers to improve communication efforts about the safety and benefits of the vaccination series.

There exists an ever-growing emphasis on patient education, shared decision making, and public and population health in medical school curriculums. Thus, more research is being undertaken to provide more appropriate direction and education on current public health communication to patients. This project was undertaken to assist in this process as well as a quality improvement initiative at Central Mississippi Health Service in Jackson, MS.

Methods

Three educational and promotional documents from Center for Disease Control and Prevention (CDC) and one visual image of cervical cancer from Google Images were retrieved.
for examination (see appendix 1). Four commonly used public health strategies to promote vaccinations were examined. The strategies were: 1) Presenting facts about disease risks and prevention, 2) Correcting misinformation, 3) Using dramatic narratives, and 4) Displaying visuals of the risks. There was one document per strategy. The participants participated in focus groups and individual sessions to review the HPV vaccine educational documents and were then asked to fill out a survey that would do the following (View Appendix 2 for the survey):

1. Rate the documents based on how likely they were to obtain the HPV vaccine or have their children/grandchildren be administered the vaccine after reviewing the different materials.
2. Provide advice on effective educational strategies to increase the rate of HPV vaccination administration.

Focus groups and individual sessions were held at Central Mississippi Health Center in Jackson, MS over the course of five weeks. The data was place in an excel chart and analyzed.

**Results** (View Appendix 3)

Twenty-one participants filled out the survey, while 22 provided advice on how to potentially better educate the public on the HPV vaccination. Of the participants, all were African American, two were eligible to receive the vaccination, fifteen were parents and four were grandparents. The one that answered the open-ended questions was also a grandparent.

**Document 1: “HPV Vaccine: Gardasil, What you Need to Know” Strategy: Presenting Facts**

After reading document one, 76.2% (16/21) of participants said they were more likely to obtain the HVP vaccination or have it administered to their child or grandchild. Fourteen percent (3/21) said their opinion was unchanged. One person, (5%) rated it as less likely to obtain he
vaccination and the last person (1/21) said that she was more confused because it was too much information at once. She said that this was her first time hearing of HPV. Nineteen percent (4/21) of participants reported that this document was the best to promote the vaccination. It was suggested that this document should include a picture of cervical cancer and maybe cut back on some of the information to enhance the promotional effort. (View Appendix 3, Figure 1)

Document 2: “HPV Vaccine is Cancer Prevention” Strategy: Correcting Misperceptions

Approximately 71% (15/21) of people reported that they were more likely to receive the vaccine or have it administered to their child or grandchild after reading document two. Nineteen percent (4/21) said their opinion was unchanged. Two participants or 10% said they were less likely and no one reported being more confused after reading the document. One person said this document was the best to promote the vaccine. It was suggested that this document could be used to get audience’s attention because it was simple and colorful, followed by document number 1 to inform people of the facts. (View appendix 3, figure 2)

Document 3: “I was Healthy and Got Cervical Cancer” Strategy: Dramatic Narrative

Document three, was the highest rated single document. Approximately 86% (18/21) of participants stated that they were more likely to receive the vaccine or have it administered to their child or grandchild. Ten percent (2/21) said their opinion was unchanged and one person selected the less likely rating. No one became confused after reading the document. Three individuals stated that this was the best document to promote the vaccination. It was suggested that this document should include some information about the vaccination to improve it. (View appendix 3, figure 3)

After viewing and reading, document four, 81% (17/21) of participants reported that they were more likely to receive the vaccination or have the vaccination administered for their child or grandchild. Three people said their opinion was unchanged, no one reported they were less likely and one person became more confused after viewing the document. Eight (38%) participants felt that this document was the best to promote the vaccination. To enhance this picture, it was suggested that it provide more detail of what the picture is and include information about HPV. (View appendix 3, figure 4)

Other suggestions to improve the educational materials were reported. Participants felt that a combination of the documents will enhance the promotional effort. The most frequently used documents in a combination, with greatest to least was document one (the fact sheet), document four (the picture), document three (the narrative) and document two (Cancer Prevention). The most suggested combination was the picture with the fact sheet, followed by the narrative with the picture. Lastly, it was suggested that all documents should have color, pictures and refrain from information overload.

Upon completing the surveys, participants were given an opportunity to provide advice to enhance the public awareness about the HPV vaccination. To overcome the concern of parents that having the vaccine will condone sexual activity, it was suggested that promotional efforts should include the message that the vaccination will prevent cancer and help children live longer, more successful lives. They also said that we should discuss the ideas that it’s just another childhood preventative vaccine. Another major topic that was brought up among many of the participants was the location. Because several patients either reported that they had never heard
of HPV or knew of various individuals who had never heard of HPV, it was suggested that HPV be a topic of discussion at doctor’s offices for everyone between the ages of 9-26 years old. It was suggested that health care personnel promote the HPV vaccination just like they do for hypertension, diabetes, high cholesterol and cancer at churches and health fairs. In fact, 50% of participants suggested that education should take place at health fairs and churches. Thirty-six percent suggested having seminars or workshops in the community and 23% suggested that it should be mentioned to patients while being triaged at doctors’ offices. One unique suggestion was to develop videos about the vaccination and have them placed on the social media website for the health center, in the waiting room and on T.V. commercials. This was suggested by 18% of the participants. Furthermore, 22.7% of participants suggested that collaborations should be made with schools to incorporate HPV information into the sexual health curriculums. Lastly, target populations that were suggested include, middle, high school and college students as well as parents and grandparents. (See Appendix 3, Figure 5 for a break-down of suggested locations).

Discussion

Overall, the documents were thought to be adequate to promote the HPV vaccination. The most influential single document, as requested by the participants, is one with simple facts and pictures. Thus condensing and adding two of the studied documents together would provide a better single document. Regarding the four commonly used public health strategies, the most impactful to promote the HPV vaccination was the visual image of cervical cancer, followed by the narrative. This may suggest that people are emotional and visual learners. In addition they may be more persuaded by pictures of a health condition and a person’s story of being affected by a health condition, more than learning the facts of a disease or having a misperception.
corrected. A common theme regarding the message that should be used was that the HPV vaccination is cancer prevention was reported. This leads me to wonder why Document 2 was not the most suggested promotional document since it states those exact words, but it also underscores the importance of visual images since it was the most selected promotional document. This also highlights the importance of considering health literacy when engaging in public education. The other common message that was suggested for use was that the vaccination would help children live longer, more successful lives. This suggests that this community is interested in helping their children become successful and live long and probably should be listed as one of the benefits to enhance the vaccination rates.

When participants were asked the question, “How can we better promote the HPV vaccination?” most of the participants discussed locations, which demonstrates that there may be a gap in the locations that HPV education is provided. With 50% of the participants saying that promotion should take place in churches, it brings in a cultural component that tells us that one of the best avenues to discuss health is in faith communities. This concept has been taken into consideration and done quite well when raising awareness to high blood pressure, diabetes, high cholesterol, cancer and other health conditions. This concept was underscored by the fact that a few of the participants stated that we should do this topic “just like you do with blood pressure and diabetes”. Although only a few mentioned developing videos for social media, commercials and waiting rooms, it seems to be an avenue of great potential with how popular internet and social media is. In general a variety of locations including schools, health fairs, doctor’s offices, community workshops and shopping centers, were mentioned by many of the participants. This suggests that they would like to see multiple modalities and opportunities to learn more about HPV and the vaccine.
Recommendations

Based on the results of this study, my recommendations are the following:

1. When publically promoting the HPV vaccination, it may be useful to use a story or visual image to capture the attention of the audience, and then share the facts regarding HPV and the vaccination.

2. When promoting the vaccination in a smaller setting or at the health center, it is okay to begin with a small discussion of HPV and then discuss the vaccination. At this time, it may be helpful to provide a one-page document with a few facts about HPV and a picture of cervical cancer.

3. HPV vaccination campaigns should be implemented at health fairs, churches, community centers and schools.

4. A short video discussing HPV and ways to prevent it can be developed and posted to the Central Mississippi Health Center website and Facebook page. It can also be played on the T.V. located in the waiting room at the Winter Street Clinic. I would be more than happy to develop this video.

5. Because it was the first time learning about HPV for many of the individuals that participated, it should be a topic of discussion at all annual physical exams with children and parents/grandparents, even if they are not there for vaccinations. This may help heighten the awareness of HPV in the community.

Conclusions

Overall, this project was successful in completing its objectives, which were to learn the most effective/preferred promotional message to promote the HPV vaccination and to gain insight on how to better educate the public about the HPV vaccination. Although there were only
21 participants, thus limiting the statistical strength of the data, it does provide a nice start to enhancing the promotional effort. Future research should include more of this kind to obtain more data and opinions. In addition, because I was unable to conduct the health literacy component as originally planned, health literacy should be studied to determine how and if it plays a role in HPV vaccination promotion.
References


Appendices

Appendix 1: Health Promotional Materials

VACCINE INFORMATION STATEMENT

**HPV Vaccine** Gardasil® (Human Papillomavirus)

What You Need to Know

<table>
<thead>
<tr>
<th>1</th>
<th>What is HPV?</th>
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<tr>
<td>Genital human papillomavirus (HPV) is the most common sexually transmitted virus in the United States. More than half of sexually active men and women are infected with HPV at some time in their lives. About 20 million Americans are currently infected, and about 6 million more get infected each year. HPV is usually spread through sexual contact. Most HPV infections don’t cause any symptoms, and go away on their own. But HPV can cause cervical cancer in women. Cervical cancer is the 2nd leading cause of cancer deaths among women around the world. In the United States, about 12,000 women get cervical cancer every year and about 4,000 are expected to die from it. HPV is also associated with several less common cancers, such as vaginal and vulvar cancers in women, and anal and oropharyngeal (back of the throat, including base of tongue and tonsils) cancers in both men and women. HPV can also cause genital warts and warts in the throat. There is no cure for HPV infection, but some of the problems it causes can be treated.</td>
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<table>
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<tr>
<th>2</th>
<th>HPV vaccine: Why get vaccinated?</th>
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<tbody>
<tr>
<td>The HPV vaccine you are getting is one of two vaccines that can be given to prevent HPV. It may be given to both males and females. This vaccine can prevent most cases of cervical cancer in females, if it is given before exposure to the virus. In addition, it can prevent vaginal and vulvar cancer in females, and genital warts and anal cancer in both males and females. Protection from HPV vaccine is expected to be long-lasting. But vaccination is not a substitute for cervical cancer screening. Women should still get regular Pap tests.</td>
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<table>
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<tr>
<th>3</th>
<th>Who should get this HPV vaccine and when?</th>
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<tbody>
<tr>
<td>HPV vaccine is given as a 3-dose series</td>
<td>1st Dose</td>
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<td></td>
<td>2nd Dose</td>
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<tr>
<td></td>
<td>3rd Dose</td>
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<tr>
<td>Additional (booster) doses are not recommended.</td>
<td></td>
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<tr>
<td>Routine vaccination</td>
<td>• This HPV vaccine is recommended for girls and boys 11 or 12 years of age. It may be given starting at age 9.</td>
</tr>
<tr>
<td>Why is HPV vaccine recommended at 11 or 12 years of age?</td>
<td>HPV infection is easily acquired, even with only one sex partner. That is why it is important to get HPV vaccine before any sexual contact takes place. Also, the response to the vaccine is better at this age than at older ages.</td>
</tr>
<tr>
<td>Catch-up vaccination</td>
<td>This vaccine is recommended for the following people who have not completed the 3-dose series:</td>
</tr>
<tr>
<td></td>
<td>• Females 13 through 26 years of age.</td>
</tr>
<tr>
<td></td>
<td>• Males 13 through 21 years of age.</td>
</tr>
<tr>
<td>This vaccine may be given to men 22 through 26 years of age who have not completed the 3-dose series.</td>
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<tr>
<td>It is recommended for men through age 26 who have sex with men or whose immune system is weakened because of HIV infection, other illness, or medications.</td>
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<td>HPV vaccine may be given at the same time as other vaccines.</td>
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</tbody>
</table>
4 Some people should not get HPV vaccine or should wait.

- Anyone who has ever had a life-threatening allergic reaction to any component of HPV vaccine, or to a previous dose of HPV vaccine, should not get the vaccine. Tell your doctor if the person getting vaccinated has any severe allergies, including an allergy to yeast.
- HPV vaccine is not recommended for pregnant women. However, receiving HPV vaccine when pregnant is not a reason to consider terminating the pregnancy. Women who are breast feeding may get the vaccine.
- People who are mildly ill when a dose of HPV vaccine is planned can still be vaccinated. People with a moderate or severe illness should wait until they are better.

5 What are the risks from this vaccine?

This HPV vaccine has been used in the U.S. and around the world for about six years and has been very safe.

However, any medicine could possibly cause a serious problem, such as a severe allergic reaction. The risk of any vaccine causing a serious injury, or death, is extremely small.

Life-threatening allergic reactions from vaccines are very rare. If they do occur, it would be within a few minutes to a few hours after the vaccination.

Several mild to moderate problems are known to occur with this HPV vaccine. These do not last long and go away on their own.

- Reactions in the arm where the shot was given:  
  - Pain (about 8 people in 10)  
  - Redness or swelling (about 1 person in 4)
- Fever:  
  - Mild (100°F) (about 1 person in 10)  
  - Moderate (102°F) (about 1 person in 65)
- Other problems:  
  - Headache (about 1 person in 3)
- Fainting: Brief fainting spells and related symptoms (such as jerking movements) can happen after any medical procedure, including vaccination. Sitting or lying down for about 15 minutes after a vaccination can help prevent fainting and injuries caused by falls. Tell your doctor if the patient feels dizzy or light-headed, or has vision changes or ringing in the ears.

Like all vaccines, HPV vaccines will continue to be monitored for unusual or severe problems.

6 What if there is a serious reaction?

What should I look for?

- Look for anything that concerns you, such as signs of a severe allergic reaction, very high fever, or behavior changes.

Signs of a severe allergic reaction can include hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, and weakness. These would start a few minutes to a few hours after the vaccination.

What should I do?

- If you think it is a severe allergic reaction or other emergency that can’t wait, call 9-1-1 or get the person to the nearest hospital. Otherwise, call your doctor.
- Afterward, the reaction should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your doctor might file this report, or you can do it yourself through the VAERS web site at www.vaers.hhs.gov, or by calling 1-800-822-7967.

VAERS is only for reporting reactions. They do not give medical advice.

7 The National Vaccine Injury Compensation Program

The National Vaccine Injury Compensation Program (VICP) is a federal program that was created to compensate people who may have been injured by certain vaccines.

Persons who believe they may have been injured by a vaccine can learn about the program and about filing a claim by calling 1-800-338-2382 or visiting the VICP website at www.hrsa.gov/vaccinecompensation.

8 How can I learn more?

- Ask your doctor.
- Call your local or state health department.
- Contact the Centers for Disease Control and Prevention (CDC):  
  - Call 1-800-232-4636 (1-800-CDC-INFO) or  
  - Visit CDC’s website at www.cdc.gov/vaccines

Vaccine Information Statement (Interim)

HPV Vaccine (Gardasil)

5/17/2013

42 U.S.C. § 300aa-26
You’re not opening the door to sex.

You’re closing the door to cancer.

HPV vaccine is cancer prevention.
Talk to your child’s doctor about vaccinating your 11-12 year old against HPV.
www.cdc.gov/vaccines/teens
Jacquelyn's story: "I was healthy—and got cervical cancer."

When I was in my late 20's and early 30's, in the years before my daughter was born, I had some abnormal Pap smears and had to have further testing. I was told I had the kind of HPV that can cause cancer and mild dysplasia.

For three more years, I had normal tests. But when I got my first Pap test after my son was born, they told me I needed a biopsy. The results came back as cancer, and my doctor sent me to an oncologist. Fortunately, the cancer was at an early stage. My lymph nodes were clear, and I didn't need radiation. But I did need to have a total hysterectomy.

My husband and I have been together for 15 years, and we were planning to have more children. We are so grateful for our two wonderful children, but we were hoping for more—which is not going to happen now.

The bottom line is they caught the cancer early, but the complications continue to impact my life and my family. For the next few years, I have to get pelvic exams and Pap smears every few months, the doctors measure tumor markers, and I have to have regular x-rays and ultrasounds, just in case. I have so many medical appointments that are taking time away from my family, my friends, and my job.

Worse, every time the phone rings, and I know it's my oncologist calling, I hold my breath until I get the results. I'm hopeful I can live a full and healthy life, but cancer is always in the back of my mind.

In a short period of time, I went from being healthy and planning more children to all of a sudden having a radical hysterectomy and trying to make sure I don't have cancer again. It's kind of overwhelming. And I am one of the lucky ones!

Ultimately I need to make sure I'm healthy and there for my children. I want to be around to see their children grow up.

I will do everything to keep my son and daughter from going through this. I will get them both the HPV vaccine as soon as they turn 11. I tell everyone—my friends, my family—to get their children the HPV vaccine series to protect them from this kind of cancer.
Pictures of what cervical cancer can look like:
Appendix 2: Participant Survey

Evaluating Effective Messaging for Human Papilloma Virus (HPV) Vaccination Promotion

Please Choose One:
___ I am eligible to get the HPV vaccination (9-26)
___ I am a parent of a 9-26 year old
___ I am a grandparent of a 9-26 year old

Please Choose One:
___ I do not plan on getting the HPV vaccine for myself, child, or grandchild
___ I plan on getting the HPV vaccine for myself, child, or grandchild
___ I am unsure if I will get the HPV vaccine for myself, child, or grandchild
___ I have already gotten the vaccine for myself, child or grandchild.

Part One:

1. After reading “HPV Vaccine: Gardasil, What You Need to Know” I am: (choose one)
   a. More likely to get the HPV Vaccination for myself, my child or grandchild
   b. Unchanged about my opinion about the HPV vaccination
   c. Less likely to get the HPV vaccination for myself, my child or grandchild
   d. I am more confused about the HPV Vaccination

2. After reading “HPV Vaccine is Cancer Prevention” I am: (choose one)
   a. More likely to get the HPV Vaccination for myself, my child or grandchild
   b. Unchanged about my opinion about the HPV vaccination
   c. Less likely to get the HPV vaccination for myself, my child or grandchild
   d. I am more confused about the HPV Vaccination

3. After reading “I was Healthy--and Got Cervical Cancer” I am: (choose one)
   a. More likely to get the HPV Vaccination for myself, my child or grandchild
   b. Unchanged about my opinion about the HPV vaccination
   c. Less likely to get the HPV vaccination for myself, my child or grandchild
   d. I am more confused about the HPV Vaccination

4. After Viewing “Visual Images of Cervical Cancer” I am: (choose one)
   a. More likely to get the HPV Vaccination for myself, my child or grandchild
   b. Unchanged about my opinion about the HPV vaccination
   c. Less likely to get the HPV vaccination for myself, my child or grandchild
   d. I am more confused about the HPV Vaccination

Part Two:

How can we improve our education about the HPV vaccine?
Appendix 3: Results Figures

Figure 1 - Participants’ Reaction to Reading Document 1: “HPV Vaccine: Gardasil, What you Need to Know”

Figure 2 - Participants’ Reaction to Reading Document 2: “HPV Vaccine is Cancer Prevention”
Figure 3 - Participants’ Reaction to Reading Document 3: “I was Healthy and Got Cervical Cancer”

![Document 3 Pie Chart]

Figure 4 - Participants’ Reaction to Reading Document 4: “Pictures of What Cervical Cancer can Look Like”

![Document 4 Pie Chart]
Figure 5 - Suggested Locations for Better Outreach for HPV

Locations

- Health Fairs
- Churches
- Community Workshops
- Schools
- Doctor’s Offices
- Videos/Commercials
- Shopping Areas
- Neighborhoods

0% 10% 20% 30% 40% 50% 60%