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Beliefs Among Mothers of Adolescent Females on Cervical Cancer Vaccination

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Abstract

Hispanic and African American women are infected with sexually transmitted diseases more often than are Caucasian women. This racial disparity is also seen in the incidence of human papillomavirus (HPV) and cervical cancer. The medical connection between HPV and cervical cancer is often unknown or misunderstood among women. This study addressed the beliefs and subsequent health decisions of minority parents regarding whether to get their daughters vaccinated against HPV. The theoretical framework for this study was Rosenstock's health belief model (HBM). The specific study design used was Husserl and Heidegher's theory on Phenomenology. This qualitative study utilized focus groups containing mothers of young girls ages 9 to 12 years, who were recruited from local churches in San Antonio, TX. Twenty-seven mothers, African American (9), Hispanic (7), and Caucasian (11), participated in one of two focus groups for each racial group. Each focus group session was audiotaped and NVivo for Mac was used to perform a content analysis and to identify the themes present. Minority parents held stronger cultural and spiritual beliefs against vaccinating their daughters for a sexually transmitted disease more so than believing that their daughters were at risk for being exposed to STDs such as HPV. These beliefs presented as barriers to initiating the desired HPV prevention and screening practices. Gaps in the current knowledge of all parents exist and must be thoroughly addressed for all racial/ ethnic groups. Future educational programs need to not only address the gaps in knowledge but also shape and package public health messages with sensitivity to cultural and spiritual concerns.

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Dedication

I humbly dedicate this body of work to all of the mothers and young girls who struggle to communicate about important sexual health topics. I pray that my research will shed light on the health belief barriers and misconceptions present within minority communities near and far.

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Chapter 1: Introduction to the Study

Hispanic and African American women are affected by sexually transmitted diseases at a much higher rate than Caucasian women (Shain et al., 1999). Human papillomavirus (HPV) is more prevalent in Hispanic and African American women than in Caucasian women (CDC, 2013). Of the 150 plus types of HPV, 40 are sexually transmitted (National Cancer Institute [NCI], 2010). According to the NCI (2010), sexually transmitted HPV not only causes genital warts, it also causes cervical cancer in women. Ten percent of women who are infected with high-risk HPV are at an even greater risk for developing cancerous cervical cells (CDC, 2008).

Warner (2003) found that most women have very little knowledge about the link between HPV and cervical cancer. This is problematic because being unaware of such critical information puts creates an even greater risk of one being plagued with devastating diseases. This trend must change to decrease the transmission of HPV and to reduce incidence of cervical cancer. This can be best accomplished by educating the public with more tailored public health messages (Waller, McCaffrey, Forrest, & Wardle, 2004). Over half of sexually active people in the United States will be infected with HPV at some point in their life (CDC, 2010). Both males and females can be infected with HPV. They may not have any symptoms at all, and therefore they may pass it on to their sexual partners without knowing it (CDC, 2010).

Health outcomes are shaped by one's prior experiences and personal beliefs. The health experiences people have and how they feel about those experiences affect how they respond to future experiences. A review of the literature showed that Hispanic and

African American women often have little knowledge about HPV and its link to cervical cancer. In this study, I wanted to identify the specific health beliefs of minority mothers and their level of knowledge of high-risk HPV and cervical cancer, and how their beliefs and knowledge affect their decisions regarding their daughters' reproductive health choices. This study focused on how these beliefs and knowledge affect whether a mother decides to get her adolescent daughter vaccinated against HPV.

The implications for social change include enhancing the understanding of the health beliefs of minority parents and how these beliefs influence their decision to get their daughter vaccinated against HPV. The knowledge gained from this study may be used to develop more effective public health messages regarding cervical cancer prevention, specifically targeting minority adolescent females and their parents.

Background of Problem

Young people today lead very risky lifestyles. The choices they make today will affect them later in life. This is not only true of the typical lifestyle choices such as eating habits and physical activity; it is also the case for their sexual lifestyle choices (Mulye, et al., 2009). According to the CDC (as cited in Kaiser Family Foundation, 2006) approximately 35% of 13-19 year olds have HPV. The CDC (2011) noted that HPV is the most common sexually transmitted disease in the United States.

Another disease that is greatly affected by lifestyle health behaviors is cervical cancer. Unprotected sex or multiple sex partners can increase the risk of contracting HPV, which is the main risk factor for cervical cancer (CDC, 2011). Cervical cancer is the second most common cancer among women worldwide (Park, 2005). It is estimated

that each year about 12,000 women get cervical cancer in the United States (CDC, 2011). The CDC (2011) reported that most of these cases are associated with HPV. Cervical cancer is the only cancer that has one cause: HPV (CDC, 2011).

Statement of the Problem

In the United Sates, Hispanic and African American women are more likely to be diagnosed with cervical cancer in comparison to their Caucasian counterparts. Similar disparities exist regarding cervical cancer incidence and mortality rates in the state of Texas. Hispanics have the highest incidence of cervical cancer in Texas (Tortolero-Luna et al., 1998). In a review of the cervical carcinoma trends from 2004-2008, 11 Hispanic women were diagnosed with HPV-associated cervical cancer per 100,000 women, compared to 9.9 for African American women and 7.4 for Caucasian women (CDC, 2012).

Jay and Moscicki (2000) cited a joint study conducted by the Kaiser Family Foundation and Harvard University School of Public Health in which 70% of 1,006 Americans reported that they had never heard of HPV. The current published literature does not address the beliefs of Hispanic and African American mothers and young women regarding their decision to have their daughters or themselves vaccinated. I sought to address this gap in the literature with the intent of developing more effective public health messages.

Purpose of the Study

The purpose was to gain a better understanding of how the beliefs of Hispanic and African American mothers influence their decisions regarding their daughters'

reproductive health. Learning more about the beliefs affecting a mother's decisions may provide insight and guidance for health professionals. Findings may be used to improve interventions to increase the vaccination rates of Texas adolescent girls and young women.

Research Questions

Minority parents' decision to allow their daughter to receive the HPV vaccine is an important topic. Identifying the beliefs, influences, and barriers associated with the decisions being made by minority parents is needed to develop effective public health messages targeting minority families. The health belief model was used to gain insight on how beliefs should be used to shape a public health message regarding HPV vaccinations. The following research questions (RQs) were used to guide the study:

- RQ1: How do the beliefs differ among Hispanic, African American, and Caucasian mothers in regards to the message the HPV vaccine portrays?
- RQ2: How do the health beliefs of Hispanic, African American, and Caucasian mothers shape the critical conversations with daughters regarding reproductive health and sexual activity?
- RQ3: How do cultural values and beliefs influence cervical cancer screening practices among Caucasians, Hispanics, and African Americans?
- RQ4: What cervical cancer screening barriers exist among Caucasians, Hispanics, and African Americans?

Framework

The theoretical framework for this study was Rosenstock's (1974) health belief model (HBM). This model is the hallmark social cognition model developed by Rosenstock in 1966. This model takes into consideration the following constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and mediating factors. The HBM has evolved into a model addressing the knowledge and perceptions affecting individuals' personal responsibility for the choices they make regarding their health (Rosenstock, 1974). The HBM states that people are more likely to take the necessary preventive care actions if the perceive that (a) they are susceptible to the condition, (b) the condition and its potential consequences are serious, (c) there are minimal barriers to the required behavioral actions, (d) the required behavioral actions are beneficial, and (e) they are cued to engage in the required actions (Chen et al., 2011). This model highlights how a person's beliefs regarding potential health threats as well as the beliefs regarding the effectiveness of a proposed corrective behavior are strong predictors of whether such behaviors are exhibited (Rosenstock, 1974).

The HBM has been widely used to analyze screening behaviors for many preventable medical conditions. Cervical cancer is the second most common malignancy affecting women, and a better understanding of the factors that affect a woman's decision to receive a Pap smear are paramount to an effective cervical cancer awareness and prevention program (Guvenc, Akyuz, & Acikel, 2010). I used the HBM model to analyze the knowledge level and beliefs of mothers and how their decisions about their daughters' reproductive health are affected by their beliefs. I sought to determine how a

mother's overall perception of HPV and cervical cancer affects how she addresses the decision regarding getting her daughter vaccinated against HPV with the intention of preventing cervical cancer. As knowledge level increases, beliefs may align with medical facts, and ultimately the transmission of HPV and the incidence of cervical cancer may decline in African American and Hispanic women.

Nature of the Study

I used a qualitative approach including surveys completed by mothers of young girls ages 9 to 12 years. The specific study design used was Husserl and Heidegher's theory on Phenomenology. Phenomenology takes into consideration how an experience, or phenomenon, is perceived by a person based upon their perceptions and reactions (Clarke, 2010). Participants were recruited from local churches in San Antonio, Texas. I also conducted focus groups to identify more detailed perceptions, beliefs, and barriers regarding HPV, cervical cancer, and the HPV vaccine. The purpose of the study was to investigate the beliefs and barriers influencing the decision to vaccinate against HPV in three major ethnic groups living in San Antonio, Texas.

Definition of Terms

The following terms were used in this study.

African American: A person having origins in any of the Black racial groups of Africa (U.S. Census Bureau, 2014).

Caucasian: A person having origins in any of the original peoples of Europe, the Middle East, or North Africa (U.S. Census Bureau, 2014).

Hispanic: A person of Latin American descent living in the United States, especially a person of Cuban, Mexican, or Puerto Rican origin (Merriam-Webster, 2015).

Perceived barriers: Beliefs that a particular health action will have negative results (Glanz et al., 2008).

Perceived benefits: Beliefs that a particular health action will have positive results (Glanz et al., 2008).

Perceived severity: Beliefs that a condition is serious, or beliefs that it is not serious, leaving it untreated (Glanz et al., 2008).

Perceived susceptibility: Beliefs in the vulnerability to a disease or condition (Glanz et al., 2008).

Assumptions

I made the following assumptions in this study:

1. Racial identification is a social definition rather than a biological or genetic definition.
2. All participants select one race/ ethnicity. If they are of mixed race/ethnicity, they will have to choose one. This was done in order to allow participants to select what race they most identify with.
3. Women who self-identified as Hispanic may be of any race. Hispanic is an ethnicity.
4. Mothers play a vital role in the health care decisions within their family/ home. Their beliefs and perceptions are key in changing outcomes.

Limitations

I identified the following limitations in this study:

1. The study was limited to a sample population of women in Bexar County, Texas.
2. The sample size was small.
3. Sex and sexually transmitted diseases were sensitive topics, which may have affected the participants' willingness to discuss them.
4. Non-English speaking participants were excluded from the study.
5. The moderator did not belong to the same racial/ethnic group for 4 of the 6 focus groups. This could have led to participants being hesitant to share certain perspectives or beliefs.

Significance

To date, no research has been carried out focusing on Texas mothers' knowledge and beliefs about HPV, the HPV vaccine, and cervical cancer. This study intended to address this gap. The CDC (2011) indicated that African American women had the highest rates of HPV in the United States. Most of the HPV cases were among girls ages 14 to 19 years (CDC, 2011). There has been much debate about vaccines being given to young girls and mixed messages about how this might suggest that sex is acceptable. Many mothers are wary of getting their daughter vaccinated for fear that she might see this as permission to begin having sex. Mothers have reported that their children are not sexually active and therefore do not have a need for the vaccine (Munsell, Gray, Reed, Vasquez, & Vlasak, 2010). Other mothers believe that young girls must be protected

from cancer by any means necessary. It is important to understand that the benefit of protecting young girls and women from cancer could potentially far outweigh the risk of miscommunication about the approval of becoming sexually active (CDC, 2011).

There are many racial health disparities plaguing the U.S. health care system, both public and private. As public health professionals address the issues surrounding preventive care, it is imperative that such disparities are not only addressed but eliminated (Healthy People, 2013). According to the Health and Human Services Commission (2013), the state of Texas has a significant population of minorities, and Hispanics in particular, who experience health disparities at an alarming rate. San Antonio, Texas's population is 63% Hispanic, Texas's population is 38% Hispanic, and the United States' population is 17% Hispanic (U.S. Census, 2013). With significant differences in demographics across the United States and within the state of Texas, public health messages and campaigns must be geared toward the intended audience.

Summary

Chapter 1 presented the key elements of the study. Chapter 2 provides an in-depth literature review of topics related to the study, including HPV, cervical cancer, cervical cancer screening, HPV vaccination, and how health beliefs shape medical decisions.

Chapter 2: Literature Review

The beliefs of Hispanic and African American mothers and young women that influence their decision to have their daughters or themselves vaccinated or not is an underresearched area in public health. I sought to address this gap in the current literature. This chapter provides a review of the literature on cervical cancer and the beliefs associated with cervical cancer vaccination. The areas of interest include a brief history of cervical cancer, identification of the high-risk populations affected by cervical cancer, current screening recommendations, HPV, and the HPV vaccine.

Literature Search Parameters

I used the Thoreau multiple database when searching for relevant articles. Other databases included Medline, PubMed, and Academic Search Premier. The key words included *cervical cancer*, *HPV*, *HPV vaccine*, *HPV vaccination*, *human papillomavirus*, and *health belief model*. I searched with these key words individually or in various combinations to identify relevant published sources. I also searched Google Scholar to find additional references from the World Wide Web. I reviewed the reference list from each article for additional articles not previously identified. Articles linking cervical cancer and HPV were selected. The search parameters included articles published in the last 10 to 15 years. Most of the articles were published after 2006 due to the first HPV vaccine being approved by the Food and Drug Administration in 2006.

Background on Cervical Cancer

According to the World Health Organization (2013), cancer of the cervix has been identified as the second most common cancer affecting women worldwide. The World

Health Organization reported that 500,000 new cases are diagnosed each year, and 250,000 cervical cancer patients die annually. The National Cancer Institute (2013) estimated that there would be 12,340 females newly diagnosed with cervical cancer and another 4,030 women would die in the United States. Hispanic women have the highest incidence, followed by African Americans, Asians and Pacific Islanders, and Caucasians. Native Americans have the lowest risk (American Cancer Society, 2013).

According to the National Cancer Institute (2013), when cervical cells get damaged, they are replaced by new cells that have undergone the mitotic process. There are checkpoints in this process that control for poorly developed cells or prevent cells from growing and dividing when they are not needed. When these checkpoints are ignored, cells grow and divide uncontrollably. Cells that are damaged may not die, and they will continue to grow irregularly. This leads to an excess of cervical cells, which is called a tumor. These types of growths can be benign or malignant. Benign growths include polyps, cysts, and genital warts. These are typically not harmful and do not affect nearby tissues. Malignant growths are considered cancers. Cervical cancer most definitely is of concern. This type of growth has the potential to metastasize, or spread to nearby tissues and organs. The presence of cancerous cervical cells is a threat to a woman's life. Cervical cancer is typically a slow-growing cancer (National Cancer Institute, 2013).

The most common and current risk factors for cervical cancer include untreated infection with HPV, having multiple sexual partners, beginning sexual activity at an early age, having HIV, using birth control pills for more than 5 years, smoking, and having

given birth to three or more children (CDC, 2011). There are two types of cervical cancer: squamous cell carcinoma and adenocarcinoma. Eighty to ninety percent of cervical cancers are considered squamous cell carcinomas (American Cancer Society, 2013). This type of cancer typically grows in the squamous cells covering the exocervix, specifically where the endocervix joins the exocervix. Not all women who have pre-cancerous cell changes will develop cervical cancer. In most cases, this is a slow process. Cells changing from precancerous to cancer can take several years. There are, however, instances in which the changes can occur in as short a time as 1 year. Many precancers will dissipate and never develop into cancer. Some women with precancerous changes do progress to true cancer. If precancers of the cervix are identified and treated, most cases can be prevented (American Cancer Society, 2013).

Cervical cancer is diagnosed based on stages to determine the extent of growth and how far it has spread. The process of staging most commonly used by obstetricians and gynecologists is the International Federation of Gynecology and Obstetrics (FIGO) Systems of Staging. The American Cancer Society (2013) explained the stages from stage 0 through stage IV. The stages are based on clinical findings. Stage 0 involves cancer cells that are located only on the surface of the cervix and have not spread to other cervical tissues. Stage I cancer has spread to deeper cervical tissues; however, it has not spread to any other sites outside of the uterus. Stage IA and IB are substages. Stage IA is when the growth is so small that it can only be identified with a microscope and the cancer has not spread to any additional tissues or lymph nodes (American Cancer Society, 2013). Stage IA is further categorized as IA1 and IA2. Stage IA1 indicates that

the growth is less than 3 mm deep and less than 7 mm wide. Stage IA2 is 3-5 mm deep and less than 7 mm deep. Stage IB is when the growth can be seen without a microscope but has not spread to any additional tissues or lymph nodes. The cancer is deeper than 5 mm and/or wider than 7 mm. Stage IB is further categorized as IB1 and IB2. In stage IB1, the cancer is not larger than 4 cm, and in stage IB2 the cancer is larger than 4cm. Stage II cancer has grown beyond the cervix to nearby tissues, but not as distal as the lower vagina or as wide as the pelvic walls. Stage II is further categorized into IIA and IIB. Stage IIA cancer may have spread into the upper vaginal tissue. Stage IIA1 cancer is not larger than 4 cm, and stage IIA2 cancer is larger than 4 cm. Stage IIB cancer has spread into the tissue next to the cervix, the parametria. In Stage III, the cancer has spread into the lower vagina. Stage IIIA indicates that the cancer has spread to the lower third of the vagina but not to the pelvic walls. In stage IIIB, cancer has spread to the pelvic wall and/or blocked one or both ureters. Stage IV is the most advanced stage of cervical cancer, having spread to nearby organs. In stage IVA, the cancer has spread to the bladder or rectum, but has not spread to nearby lymph nodes. In stage IVB, the cancer has spread to distant organs beyond the pelvis, such as the lungs (American Cancer Society, 2013).

If cancer is detected and properly treated in Stage I, a woman's 5-year survival rate is 90-95%; however, if the cancer is not detected until Stage IV, the survival rate drops to 20% to 30% (American Cancer Society, 2013).

High-Risk Populations

Cervical cancer is the seventh leading cancer in Texan women. In 2011-2012, approximately 14,000 cervical screenings were provided to Texas women by the Texas Breast and Cervical Cancer Services Program. Slightly fewer than 5,000 precancers and 73 invasive cancers were detected (Texas Department of State Health Services, 2013). In Texas, Hispanic women have the highest incidence, followed by African American and non-Hispanic Whites. From 1997 to 2006, the age-adjusted incidence for Hispanic women was 15.2 per 100,000 women, the African American incidence was 12.6 per 100,000 women, and the Caucasian incidence was 8.6 per 100,000 women (Cancer Prevention & Research Institute of Texas, 2010). Over a 10-year span, African American women had the highest age-adjusted mortality rates from cervical cancer (5.8 per 100,000), followed by Hispanic women (4.4 per 100,000) and non-Hispanic Whites (2.6 per 100,000) (Cancer Prevention & Research Institute of Texas, 2010).

The surveillance epidemiology end report (SEER) data from 2006 to 2010 is reported in Table 1. The median age at diagnosis with cervical cancer was 49 years. The median age at death for cervical cancer was 57 years (National Cancer Institute, 2012).

Table 1

SEER Cervical Carcinoma Diagnosis Data from 2006-2010

Age at Diagnosis	Percentage
< 20	0.2
20-34	13.8
35-44	25.7
45-54	24.2
55-64	17.0
56-74	10.7
75-84	5.8
85+	2.6

In the United States, the rate of Hispanic women diagnosed with cervical cancer from 2006 to 2010 was 10.9 per 100,000 women. This was the highest rate of all the ethnicities, followed by African American women at 9.6 and non-Hispanic Whites at 7.9 per 100,000 women. Hispanic women had the highest incidence rate; however, African American had the highest mortality rate of cervical cancer at 4.2 per 100,000 women. Of the three major races, White women had the lowest mortality rate at 2.2 per 100,000 women (National Cancer Institute, 2012).

Texas has a higher incidence rate (10.4 per 100,000) of cervical cancer than the United States overall. Hispanics have the highest incidence of cervical cancer in Texas (Tortolero-Luna et al., 1998). In 2007, the direct cost of invasive cervical cancer in Texas was approximately $77.4 million. The national trends regarding racial disparities on cervical cancer are similar to Texas. Hispanic women have the highest incidence, and African American women have the highest mortality rate (Tortolero-Luna et al., 1998).

When examining the situation geographically, Hispanic women living in counties located at or near the Texas-Mexico border have a higher mortality rate than women living in non-border counties. Rural counties have higher incidence and mortality rates than urban counties (Cancer Prevention & Research Institute of Texas, 2010).

Screening Recommendations

When comparing all cancers, cancer of the cervix is one of the most preventable and detectable through regular screenings. The Pap test is very effective and economical. The Pap test has been used in medical practice since the presentation of research on the use of Pap smears in diagnosing cytological changes within cervical cells in 1943 (Mayo Clinic, 2007). The test involves the medical provider collecting a sample of cervical cells. In the past, these cells were then smeared onto a glass slide for microscopic analysis. This is where the name Pap smear originated. In current practice, the cells are placed in a liquid-filled vial and sent off for testing (Mayo Clinic, 2007).

Pap tests are performed at all well-women's exams. Sexual orientation or current sexually activity have no influence on whether a woman is screened. The CDC (2012) stated that Pap tests should be performed on women beginning at age 21 years and until they reach age 65 years. This screening does not screen for sexually transmitted infections besides HPV, nor does it screen for any other type of reproductive cancers in women. The CDC (2012) stated that women who have had normal Pap tests are able to wait 3 years before their next Pap test. According to the Centers for Disease Control and Prevention (2012), women age 30 years and older should be tested for HPV at the same time that they are tested for cervical cancer. Women who are co-tested for HPV and

cervical cancer may wait 3-5 years until their next Pap test. Women age 65 years or older with a history of normal Pap tests and women who have had a total hysterectomy for noncancerous reasons may be told by their medical provider that they no longer need Pap tests (CDC, 2012).

Barriers to Screening

The Healthy People 2020 goal is 93% for cervical cancer screening. According to the CDC (2012) in a reference to the 2010 National Health Interview Survey 83% of women living in the United States reported having been screened in the past 3 years. This dropped 3.3% over the previous 10 years (2000-2010). There has been a push for screening programs within communities; however, there are still a significant number of women who are not receiving screening services from such programs (CDC, 2012). The CDC (2012) estimated that 50% of women who were diagnosed with cervical cancer reported having never been screened for cervical cancer. An additional 10% reported that they were not screened in the past 5 years (CDC, 2012). This trend is also seen among Texan women. From 1997-2006, 80% of Texan women reported having been screened in the past 3 years, slightly lower than the national average. Women with less than a high school education and women living along the Texas-Mexico border had the lowest rates for having had a pap test in the recent past (Cancer Prevention & Research Institute of Texas, 2010).

McGarvey et al. (2003) conducted a study evaluating the screening practices of women from three different minority ethnic groups. These women were Hispanic, Vietnamese, and Cambodian American. McGarvey et al. used the health belief model to

measure the beliefs and attitudes regarding the women's risk of cervical cancer. During the interviews, the women were asked about their beliefs regarding their susceptibility to cancer, the benefits from cancer screening, and perceived barriers to screening. According to McGarvey et al., 72% of Hispanic women reported that the financial burden and lack of health insurance were the key reasons for not being screened. Sixty-nine percent of Vietnamese women shared similar sentiments. Cambodian women reported slightly different barriers. Thirty-eight percent reported lack of transportation, and 46% reported language barriers as their reasons for having not been screened (McGarvey et al., 2003). Cambodian women also described how they believed that being older in age and not being sexually active led them to believe that they did not need to be screened. This study supported the claim that there is a need for cancer screening education for all women (McGarvey et al., 2003).

Human Papillomavirus

According to the CDC (2011), HPV is the most common sexually transmitted infection in the United States. Approximately 20 million people in the United States are infected with HPV. Annually, 6.2 million people are added to this number. HPV is responsible for many conditions including genital warts, abnormalities of cervical cells, and cervical cancer. Most infections are asymptomatic; therefore, those infected are unaware. Many of those cases are resolved on their own. However, there are cases that develop into cervical cancer (Friedman & Shepeard, 2006).

HPV is a double-stranded DNA virus. There are more than 100 different types of papillomaviruses. Approximately 40 of those specifically affect the genital tracts,

mouths and throats of males and females (CDC, 2013). HPV strains that affect the general female reproductive tract are considered to be either "high risk" or "low risk." "High risk" strains are associated with cancer. "Low risk" strains are not associated with cancer. The two high risk strains most closely related to cervical cancer are HPV 16 and HPV 18. The low risk strains most often associated with genital and respiratory tract warts are HPV 6 and HPV 11 (CDC, 2013).

HPV Vaccines

There are currently two vaccines on the market: Gardasil (Merck & Co, 2013) and Cervarix (GlaxoSmithKline, 2013). They are designed to protect against cervical cancer. Gardasil also provides protection against genital warts, vulvar, vaginal, and anal cancer. Cervarix is only available for females. Gardasil is available for males and females (CDC, 2013). Neither vaccination will treat current HPV infections or cervical cancer; they are considered to be a preventative step (CDC, 2013).

Gardasil

The Food and Drug Administration (FDA) approved the usage of Gardasil in 2006 (CDC, 2013). Gardasil was developed by Merck and Co. Gardasil is considered to be a quadrivalent vaccine, meaning it protects against HPV 6,11, 16, and 18. This vaccine protects against 75% of cervical cancers and 90% of genital warts (Merck & Co, 2013).

Cervarix

The FDA approved the usage of Cervarix in 2009 (GSK, 2013). Cervarix was developed by GlaxoSmithKline (GSK). Like Gardasil, it protects against HPV 16 and

18, making it a bivalent vaccine (GSK, 2013). Clinical trials have shown that Cervarix generates higher antibody levels in those vaccinated with Gardasil (CDC, 2013).

Vaccination Recommendations

The CDC (2013) recommends the HPV vaccination for young boys and girls beginning at age 9 years. Males are suggested to be vaccinated through age 21 years and females through age 26 years. These intramuscular vaccines are administered as a 3-dose series. The CDC (2013) recommends that the second dose should be given 1-2 months after the first dosage and the third six months after the first dosage (CDC, 2013).

Knowledge and Beliefs About Cervical Cancer, HPV, and the HPV Vaccine

Chen and colleagues (2011) conducted a cross-sectional study to utilizing the Health Belief Model to analyze the factors influencing the decision of caregivers to have their children vaccinated for the influenza virus. The study was conducted between March 2009 and July 2009 in Pintung, Taiwan. The caregivers were recruited from public health centers participating in vaccination programs. All caregivers had to have a child between the ages of 6 months and 36 months. Caregivers were given a three-part questionnaire addressing caregiver demographics, influenza vaccination history of the child, and lastly the health beliefs of the caregivers. Approximately 60% of the children had been vaccinated for influenza. Nearly 80% of the caregivers were mothers and 64% lived in urban parts of Pintung. Additionally, 50.7% reported being employed. The findings from the 2011 study highlighted the need for strategies and educational programs developed, to improve vaccination compliance, to take into consideration

caregiver age, employment status, residence, as well as the hospitalization and influenza history of the children (Chen et al., 2011).

Othman and colleagues (2012) evaluated the potential influence demographics, knowledge of breast cancer, fatalistic beliefs, health beliefs, and norms could have on whether Jordanian women received mammograms. The researchers conducted a cross-sectional study in two urban cities in Jordan. A total 142 women participated in the study. The women completed a survey asking about the proposed factors of influence. None of them had a history of breast cancer, per the study participation requirements. Twenty-one percent of the women reported ever having a mammogram, and only 17% of these women reported their screening being within the past year. The women who reported having been screened for breast cancer had a higher knowledge of breast cancer than those women who reported not being screened. Perceptions of self-efficacy and benefits to screening were the two health belief model components that showed the strongest correlation. The culture of the participant's helped to shape their beliefs and healthcare choices, to include mammography screening. This study identified that, like many similar groups, Jordanian women had limited knowledge on breast cancer and mammography screening (Othman et al., 2012).

Another cross-sectional study by Basu and Mittal (2011) set out to determine how awareness and acceptability are related to the Human Papillomavirus vaccine uptake. A questionnaire survey was conducted among affluent, married couples living in Kolkata, India. This city was described as a large metropolitan city. To participate in the study, the 261 couples had to have at least one daughter between the ages of 9 and 26 years.

The questionnaire included questions about socio-demographics, parental vaccination opinions, cervical cancer and HPV knowledge, and parental acceptance of the HPV vaccine. Ninety-nine percent of the parents acknowledged the benefits of vaccinations and followed the pediatric recommendations. Even amongst such a literate group, 33.7% of the fathers and 32.2% of the mothers never heard of cervical cancer. Further, only 14.2% of the fathers and 9.6% of the mothers were aware that a virus could cause cervical cancer. The parents were provided a fact sheet on cervical cancer and its relationship to HPV. After reading the information, 73.9% of mothers and fathers stated that they were willing to get their daughters vaccinated. This includes 70.6% of fathers and 71.4% of mothers who initially opposed vaccination and changed their minds. Seventy-two percent of the men and 63.2% of the women disagreed that the vaccination would send a 'no objection to sex' message. The parents actually reported that their greatest concern was the safety and possible side effects of the vaccine. This study showed how affluent, well-educated parents need simple, educational opportunities to learn about the vaccine to assist them with making the choice to get their daughters vaccinated (Basu & Mittal, 2011).

Health Belief Model

The theoretical framework for this study was Rosenstock's (1974) Health Belief Model (HBM). This model was the hallmark social cognition model. It was developed by Irwin Rosenstock in 1966. This model takes into consideration these constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and mediating factors. The HBM has evolved into a model addressing the knowledge and

perceptions affecting one's personal responsibility for the choices individuals make regarding their health (Rosenstock, 1974). The HBM states that people are more likely to take the necessary preventive care actions if they perceive that (a) they are susceptible to the condition; (b) the condition and its potential consequences are serious; (c) there are minimal barriers to the required behavioral actions; (d) the required behavioral actions are beneficial; and (e) they are cued to engage in the required actions (Chen et al., 2011). This model highlights how one's beliefs on potential health threats as well as the beliefs on the effectiveness of a proposed corrective behavior are strong predictors of whether or not such behaviors are exhibited (Rosenstock, 1974). Figure 1 depicts the health belief model and the relationship between modifying factors, an individual's beliefs, and whether they take action or not.

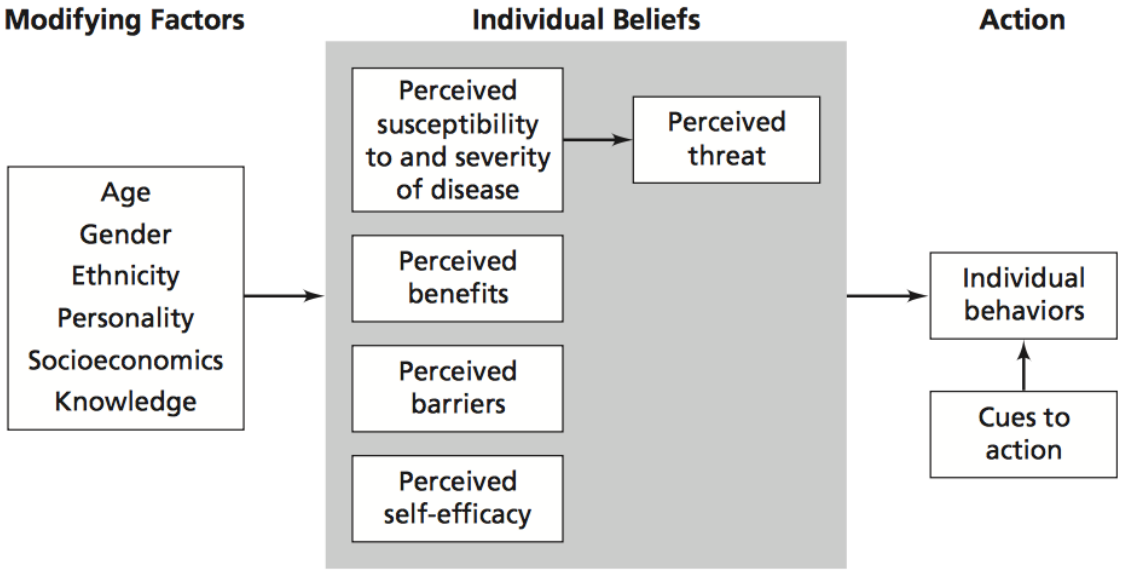

Figure 1. The health belief model components and linkages. From *Health behavior and health education: Theory, research and practice* (4th ed). (p. 49), Glanz, K., Rimer, B.K., and Viswanath, K. (2008). San Francisco: Jossey-Bass.

Health Belief Model and Cervical Cancer

The Health Belief Model has been widely used to analyze screening behaviors for many preventable medical conditions. Cervical cancer being the second most common malignancy affecting women, a better understanding of the factors that affect a woman's decision to receive a Pap smear are paramount to any effective cervical cancer awareness and prevention program (Guvenc et al., 2010).

Summary

In this chapter, the published facts about HPV, risk factors, and the HPV vaccine were discussed. The Health Belief Model and its common use in studies focused on the decisions to receive treatment or prevention plans was also reviewed. Chapter 3 will explain the methodology, sample selection, and ethical considerations associated with the selected study design.

Chapter 3: Research Method

The study was conducted to identify the health beliefs regarding cervical cancer, and how these influenced a mother's decision to get the HPV vaccine for her daughter. African American females have the highest incidence of cervical cancer, followed by Hispanic females and Caucasian females. There is clearly a racial disparity when it comes to cervical cancer outcomes; therefore, learning more about the influences affecting a mother's decisions is key. Future interventions may be geared toward increasing vaccination rates of Texas adolescent girls and young women. This chapter presents the qualitative method used to understand how a mother's beliefs and knowledge affect her decision to get her daughter vaccinated for HPV. This chapter includes information on the research design, setting and sample, data collection instrument, participation recruitment, data collection process, and data analysis.

Research Design and Rationale

I used a qualitative approach. The specific study design used was Husserl and Heidegher's theory on Phenomenology. Phenomenology takes into consideration how an experience, or phenomenon, is perceived by a person based upon their perceptions and reactions (Clarke, 2010). I conducted focus groups consisting of mothers of girls ages 9 to 12 years. This age group was chosen because the recommended vaccination age correlated with this group's daughters, who were old enough to receive the vaccination but may not have become sexually active yet. This would reduce the likelihood that the girls had been exposed to HPV. The participants were recruited at local churches in San Antonio, Texas.

Focus groups were chosen rather than individual interviews because focus groups provide for interaction among the mothers. This allowed participants to think through and clarify their thoughts and beliefs more than they would have in one-on-one interviews. According to Kitzinger (2005), focus groups not only allow one to gain insight into the participants' knowledge but also provide information about why the participants think a specific way.

Polkinghorne (2005) stated that qualitative methods are used to take a deeper look at human experiences. This methodology is used to describe experiences related to phenomena of which little is known. This is the case when it comes to the potential differences in health beliefs of mothers of young girls. Qualitative research provides insight into the lives, stories, and behaviors of people (Strauss & Corbin, 2008). On the other hand, quantitative studies focus on the relationships between key variables (Creswell, 2007). Polkinghorne (2005) described qualitative research as developing a true understanding of cultures and phenomena.

A mother's decision to allow her daughter to receive the HPV vaccine is an important topic. Identifying the beliefs, influences, and barriers associated with the decisions made by minority parents is imperative (Austin, Ahmad, McNally, & Stewart, 2002). This is critical in developing effective public health messages that target minority families (Morrison et al., 2005). The health belief model was used to gain insight into how beliefs should shape a public health message regarding HPV vaccinations.

Research Questions

The research questions were derived from the research problem. Questions were crafted to capture how the knowledge and beliefs of mothers affect their decision to get their daughters vaccinated for HPV.

RQ1- How do the beliefs differ among Hispanic, African American, and Caucasian mothers, in regards to the message the HPV vaccine portrays?

RQ2- How do the health beliefs of Hispanic, African American, and Caucasian mothers shape the critical conversations with daughters regarding reproductive health and sexual activity?

RQ3- How do cultural values and beliefs influence cervical cancer screening practices amongst Caucasians, Hispanics, and African Americans?

RQ4- What cervical cancer screening barriers exist amongst Caucasians, Hispanics, and African Americans?

Setting and Sample

Participants of the Study

Mothers who have daughters ages 9 to 12 years from various areas within Bexar County, Texas and surrounding areas were recruited to participate in focus group sessions. Participants met at a local church. This location was chosen to provide a sense of familiarity to the participants. It was important for the mothers to feel comfortable to meet at the location to share their thoughts, experiences, and beliefs.

Recruitment

The recruitment area was selected to cover as much of the San Antonio area as possible and to increase the diversity of the participants. Participants were recruited from local churches in San Antonio.

Each location had a contact person who informed the visitors of the proposed research study. He or she provided an invitation letter summarizing the purpose of the study, the need for volunteers for the focus groups, and the criteria for participating in the focus groups (Appendix A). This letter was made available in Spanish as well.

If the mother was interested in participating in the focus groups, she completed a document requesting her contact information, information about the age of her daughter(s), her ethnicity/ race, and a selection of dates and times when the focus groups would take place (Appendix A). This document was placed in the locked box at the site. The final date and times of the focus groups were determined based on the dates and times that were most convenient for many participants to attend. A reminder letter as well as information about HPV and the HPV vaccination was mailed to those who agreed to participate a week before the focus group session (Appendices B and C). Appendix C is a fact sheet developed by the CDC. The complete mailer was available in Spanish as well. The information was provided to the participants prior to the focus group sessions to reduce the amount of time spent answering questions about HPV and the HPV vaccine. This maximized the amount of time used to capture the experiences and thoughts of the participants. A reminder phone call was made 3 days before the meeting. The participants completed a research consent form when they arrived to the focus group site.

The consent form was available in Spanish as well. A light meal was offered to all participants.

Focus Groups

Krueger (2000) explained that there is less need for many focus groups when the groups are designed to include participants who are similar (Krueger, 2000). Therefore, the target sample size was 5-7 mothers for each of the 1-2 focus groups for each racial group: African American, Hispanic, and Caucasian. These three racial groups were chosen because they are the most common racial groups in San Antonio, Texas. In total, there were six focus groups. Each lasted approximately two hours.

Instrumentation and Materials

The focus group protocol questions were selected with the intent to pinpoint mothers' perceptions about their daughters being sexually active, HPV, cervical cancer, and the HPV vaccine. The questions were developed based on the published literature by Do et al. (2009) and Olshen, Woods, Austin, Luskin, & Bauchner (2005) on vaccine acceptance as well as research on sexual activity in young girls. These two studies had similar participants as the participant pool for this study. Both studies also included the health belief model to capture the beliefs and knowledge of parents. The combination of the two studies was beneficial because alone, neither study captured the desired focus needed to develop a protocol able to address the specific population in Texas and how demographics and citizenship status play a critical role in parental beliefs and decisions.

There was one moderator who led all of the focus groups. At the start of each focus group session, the moderator established a nonthreatening, warm, and friendly

environment. The following guidelines were read to the participants:

- "No right or wrong answers, only differing points of view."
- "The session is being recorded, so please one person speaking at a time."
- "It is not required to agree with each other; however, it is expected that we listen respectfully."
- "My role is to guide the discussion; I will not provide any opinions."
- "Talk to each other."

The consent form was reviewed by the moderator. Any questions were answered. The participants completed a survey that asked questions about their demographics (Appendix E). The survey was available in Spanish as well. The survey was developed in a similar study by Bryer (2011). The focus group moderator then read the following statement: "Two HPV vaccines are currently being used in the United States. These vaccines have been approved for use in all females ages 9 to 26 years of age. These vaccines are able to prevent most cervical cancers." After the statement was read, the participants were asked a series of questions about HPV and the HPV vaccine. These questions were chosen after reviewing many focus group questions on HPV. The two key studies used for developing the focus group protocol were Do et al. (2009) and Olshen et al. (2005). The focus group protocol can be found in Appendix F.

Data Analysis

Each focus group session was audiotaped. The participants agreed to have their comments, feelings, and thoughts audiotaped. Participant perspectives were compared and contrasted. I used NVivo for Mac to examine the data. The audio clips from the

focus groups were uploaded into the program. The program then performed a content analysis and identified the themes present. The themes that were captured shed light on the underlying beliefs and experiences that shape the thoughts of mothers when it comes to their daughters being vaccinated against a sexually transmitted disease. I compared and contrasted the identified themes among the three racial groups making up the various focus groups. These themes may be used in future quantitative studies and public health programs and messages designed to target the health beliefs of those most at risk for HPV.

Research Question 1 was answered from the analysis of the themes identified from the focus groups. Research Questions 2-4 were highlighted by the findings of the themes identified and the implications of the findings. These themes were further evaluated based on the three different racial groups participating.

Word Clouds

Word clouds, also known as tag clouds, are commonly used to visually capture and present textual data. They are also used to analyze text and word frequencies. The more often a word or phrase is used, the larger and bolder the word or phrase appears within the word cloud (Cui et al, 2010).

In a qualitative research setting, this type of visualization highlights the findings of textual analysis by presenting frequently used words or phrases during interview or focus group transcripts. Word clouds offer a visual method of presenting the big ideas of perspectives shared during qualitative data collection (Ramlo, 2011). Dickinson (2010) explained that pictorial representations of data, such as word clouds, have the ability to

summarize data in a manner that tabular versions are unable to accomplish. Word clouds allow for patterns and trends to be highlighted, whereas the same patterns might be lost within tabular data. Themes can be magnified through visual data (Dickinson, 2010).

The transcripts from each of the focus groups were divided into the different themes identified using NVivo. Each theme's text was uploaded into a word cloud, and the entire transcript was pasted into a text box. The software program developed a word cloud based on the frequency of the words used for each theme. The program had an option to capture the word cloud in the shape of an image related to the theme. Figures 2-6, which are presented in Chapter 4, show the word clouds developed for each theme.

Participants' Rights

The Walden University Institutional Review Board (IRB) provided approval for the study. The only people who have access to the research records are me, the IRB, and any other agency required by law. The database containing all of the survey and focus group information will remain confidential. The survey completed prior to the focus group was anonymous. All participants were asked to sign a confidentiality agreement stating that they agreed to keep the identities and comments of the other participants confidential. This was important because there were many stories and personal experiences and feelings shared. In an effort to capture and highlight true themes, the participants needed to feel as comfortable as possible sharing and trusting one another. There were no physical risks for the study participants. There were many benefits, however. The most profound was that mothers gained a better understanding of the HPV and the HPV vaccine. Additionally, the mothers were able to share experiences and

develop relationships with mothers who were facing similar choices for the daughters' health. At any point before, during, or after the focus group sessions, participants were able to withdraw their participation. The study did not begin until I was granted permission from Walden University's Institutional Review Board. The IRB approval number is 02-02-16-0248451.

Role of the Researcher

My primary roles included setting up the recruitment plans at the various locations selected, monitoring the recruitment phase, setting up the focus group locations, moderating the focus groups, and analyzing the focus group themes identified by the NVivo for Mac program. There were no personal or professional relationships between me and any of the focus group participants.

I ensured that all documents were completed, the meal for the participants was served, all sessions were properly recorded, and any comments or questions that need to be addressed later in the session or that were not on topic were noted on the meeting "parking lot," which was a visual location where any topics or comments that needed to be addressed were documented. An easel was placed at the front of the meeting room and the "parking lot" was explained and made available for the participants. I also noted any interactions and nonverbal responses made by the participants.

I collected and analyzed the data. All surveys will be kept confidential. A code was assigned to each survey, and no names were included. The surveys were properly secured throughout the duration of the study in a locked file cabinet. All surveys will be stored for 5 years and then will be destroyed.

The participants each signed a consent form. This form was provided prior to the focus group session and was included in background information on the study. Another copy was provided at the beginning of the focus group sessions. The original form was kept on file throughout the study. A triplicate copy was provided to the participants at the session to allow them to ask any questions prior to the focus group meeting. All information gathered will be kept strictly confidential.

Summary

In Chapter 3, I described the research design and process for data collection. I also described the study setting and population sample, including Caucasian, African American, and Hispanic mothers' of daughters ages 9 to 12 years. Finally, I described the focus group protocol and the data analysis tool, NVivo for Mac. Chapter 4 present the findings of the study.

Chapter 4: Results

The purpose of this study was to identify mothers' beliefs regarding cervical cancer and describe how they influence a mother's decision to get the HPV vaccine for her daughter. The research questions for this study were the following:

RQ1- How do the beliefs differ among Hispanic, African American, and Caucasian mothers, in regards to the message the HPV vaccine portrays?

RQ2- How do the health beliefs of Hispanic, African American, and Caucasian mothers shape the critical conversations with daughters regarding reproductive health and sexual activity?

RQ3- How do cultural values and beliefs influence cervical cancer screening practices amongst Caucasians, Hispanics, and African Americans?

RQ4- What cervical cancer screening barriers exist amongst Caucasians, Hispanics, and African Americans?

This chapter presents the participants' demographics and analysis of the data collected from the surveys and focus groups. A discussion of trustworthiness is also included. Each research question is answered in detail.

Target Population Demographics

Sample Description

Most of the participants were Hispanic mothers (11). The mean age of the sample was 42 years with a range of 35 to 47 years. Fifty-nine percent of participants were high school graduates (16), and 26% were college graduates (7). Thirty-three percent of participants reported an annual household income between $20,000 and $35,000 (9), and

26% reported an annual income of greater than $100,000 (7). Forty-one percent of participants reported that they attended religious services one to three times per month (11). The religious affiliation question had subcategories, to include Christian, because not all Christians have a specific religious denomination that they acknowledge. Some Christians attend non-denominational churches. This difference was important to capture in this study in order to highlight how one's religious beliefs and interpretation of such beliefs might influence their decisions. Fifty-two percent of participants reported that they were married (14). All participants reported having health insurance. Nineteen percent of participants reported that their daughters had been given the HPV vaccine (5). The mean age of the participants' daughters was 11.6 years. The demographics of the study participants are presented in Table 2.

Table 2

Sample Demographic Characteristics by Racial/ Ethnic Category

Variable	Total, 27 (%)	African American, 9	Caucasian, 7	Hispanic, 11
Age				
18-24	0	0	0	0
25-34	0	0	0	0
35-44	20 (74)	6 (67)	7 (100)	7 (64)
45-54	7 (26)	3 (33)	0	4 (36)
55+	0	0	0	0
Race/ Ethnicity				
American Indian	0	0	0	0
Asian	0	0	0	0
Black/African American	9 (33)	9 (100)	0	0
Hispanic or Latino	11 (41)	0	0	11 (100)
Native American/Pacific Islander	0	0	0	0
White or Caucasian	7 (26)	0	7 (100)	0
Other	0	0	0	0

(table continues)

Variable	Total, 27 (%)	African American, 9	Caucasian, 7	Hispanic, 11
Highest Level of Education				
Completed	0	0	0	0
Elementary	0	0	0	0
Some High School	16 (59)	4 (45)	2 (29)	10 (91)
High School Graduate	4 (15)	2 (22)	2 (29)	0
Some College	7 (26)	3 (33)	3 (43)	1 (9)
College Graduate				
Household Income				
Under $10,000	0	0	0	0
$10,000 to less than $20,000	0	0	0	0
$20,000 to less than $35,000	9 (33)	2 (22)	1 (14)	6 (55)
$35,000 to less than $50,000	5 (19)	2 (22)	1 (14)	2 (18)
$50,000 to less than $75,000	4 (15)	1 (11)	1 (14)	2 (18)
$75,000 to less than $100,000	2 (7)	1 (11)	1 (14)	0
$100,000 or more	7 (26)	3 (33)	3 (43)	1 (9)
Religion				
Catholic	3 (11)	0	1 (14)	2 (18)
Protestant	0	0	0	0
Jewish	1 (4)	0	1 (14)	0
Muslim	0	0	0	0
Buddhist	0	0	0	0
Christian	12 (44)	6 (67)	5 (71)	1 (9)
None	0	0	0	0
Other			0	
Baptist	2 (7)	2 (22)		0
Latter Day Saints	4 (15)	0		4 (36)
Lutheran	1 (4)	1 (11)		0
Pentecostal	4 (15)	0		4 (36)
Rate of Religious Attendance				
Rarely or Never	0	0	0	0
A few Times a Year	6 (22)	3 (33)	3 (43)	0
1-3 Times a Month	11 (41)	2 (22)	3 (43)	6 (55)
Once a Week	7 (26)	2 (22)	1 (14)	4 (36)
More than Once a Week	3 (11)	2 (22)	0	1 (9)
Marital Status				
Never Married	3 (11)	2 (22)	1 (14)	0
Married	14 (14)	5 (56)	4 (57)	5 (45)
Separated	1 (4)	1 (11)	0	0
Divorced	9 (33)	1 (11)	2 (29)	6 (55)
Widowed	0	0	0	0

(table continues)

Variable	Total, 27 (%)	African American, 9	Caucasian, 7	Hispanic, 11
Health Insurance				
Yes	27 (100)	9 (100)	7 (100)	11 (100)
No	0	0	0	0
Daughters have HPV Vaccine				
Yes	5 (19)	2 (22)	1 (14)	2 (18)
No	22 (81)	7 (78)	6 (86)	9 (82)
Family/ Friend have/ had Cervical Cancer				
Yes	2 (7)	1 (11)	1 (14)	0
No	25 (93)	8 (89)	6 (86)	11 (100)

Data Collection

The data collection method included structured focus groups to learn more about the beliefs of mothers and how those beliefs affected their decision to get their daughters vaccinated. This method was selected because focus groups capture participants' beliefs, experiences, feelings, attitudes, and reactions (Kitzinger, 2005). The data collected was directly related to the four research questions.

I prepared the focus group protocol based on the research questions and research framework. I facilitated all six of the focus groups over a 2-week period. The focus group protocol was used to guide the focus group discussions (Appendix F).

I recorded and transcribed the focus group discussions, and I was the only person who had access to the audio files and transcripts.

Description of Session

Each focus group had three to six participants. I served as the moderator for all six focus groups. The sessions were held in a meeting room at a church located in a

central location in San Antonio, Texas. Verbal and written consent were obtained to use the meeting location for the focus groups. Focus groups were held after 5:00 p.m. There were two focus group sessions held for each racial group. Participants were grouped by race to provide a more comfortable setting and a sense of familiarity. A light snack was provided at the meetings. All focus groups lasted 1.5 to 2 hours. All sessions were conducted in English. As the moderator, I did not participate in the conversation other than to initiate the discussion topic and move the conversation along when needed.

The participants completed a consent form when they arrived at the focus group site. Any questions the participants had about the consent form were answered. The participants also completed a survey asking questions about their demographics (Appendix E). I read a set of guidelines before the sessions began.

At the start of the formal sessions, I read the following statement: "Two HPV vaccines are currently being used in the United States. These vaccines have been approved for use in all females ages 9 to 26 years. These vaccines are able to prevent most cervical cancers." After the statement was read, I began asking the questions from the focus group protocol (Appendix F). All participants were given a chance to speak and share their thoughts. I worked to ensure no single participant dominated the conversation. My focus was to encourage participants to talk to each other. When necessary, I respectfully summarized the overall point being made and refocused the conversation (Krueger, 2000). This was very important in that the goal was to prevent strong opinions from becoming too much of an influence on the beliefs and opinions of other participants. Mason (2002) explained that participants with overpowering opinions

may influence others and the responses they make. This could introduce response bias, which is a threat to validity.

As the sessions came to a close, all participants were given an opportunity for any other responses or comments about the topics discussed. The need for confidentiality was reiterated once again.

Data Analysis

There were different phases of data analysis throughout the study. The first phase was to develop the coding categories or nodes within NVivo. This was completed using the top-down coding method (Rauss & Pourtois, 2013). This method starts with a set of predetermined codes, and the researcher analyzes the data for items that match those codes. Top-down coding is typically regarded as more positivist on the positivist-interpretivist continuum because it relies less on interpretation. The nodes were predetermined based on the questions from the focus group protocol.

The second phase involved uploading of the audio files from each of the six focus groups. I uploaded the files into NVivo within 24 hours of the focus group session. The files were then played back to confirm that they were properly loaded into the software program.

The third phase was the transcription of the audio files. The files were transcribed directly into NVivo. This process was made simpler by the features in NVivo that allow the pausing and slowing down/ speeding up of the audio.

Once the files were transcribed, both the transcript and audio files were linked to the predetermined codes, referred to as nodes. The nodes were reviewed to ensure the

audio files captured the exact segments that I set out to analyze. The nodes were analyzed and themes were identified. The initial naming of the nodes was purely inductive. Potential words or phrases were identified based upon the focus group protocol questions. As the nodes were analyzed, there were some adjustments and revisions to the coding categories, which became more deductive. Initially, the goal was to look at the data to identify temporary categories or nodes. As more data was collected and loaded into the software system, the nodes became more structured and the categories were solidified.

Evidence of Trustworthiness

It is often difficult to establish the desired confidence and trust surrounding the researcher's explanation of the phenomenon being studied. Qualitative researchers need to follow additional steps to provide support for and evidence of trustworthiness within the data (Shenton, 2004). The goal is to prove that the researchers' findings accurately reflect the participants' views instead of the researchers' perceptions. Other researchers must be able to trust the researcher's conclusions. This is important because other researchers will not have access to the data and will not be able to conduct the analysis themselves.

Credibility

The goal is to prove that the data truly speak to the findings, and that the data is believable. This can be established by providing in-depth descriptions regarding the setting, participants, and procedures (Shenton, 2004). Using NVivo to analyze the audio files allowed for credibility to be established. The system analyzed the data based on the

predetermined codes. Preselecting codes decreased the potential for me relying on my interpretation of the audio files. Additionally, there was more than one data source. The focus group audio files, transcripts of the focus group sessions, and the participant surveys were used to develop sound conclusions about the data.

Transferability

Transferability refers to how well the results from the research findings can be applied to a wider population. This is very difficult to establish in qualitative studies because the findings are specific to a small group of participants sampled from the target population. It is therefore challenging to conclude that the findings from one qualitative study can be applicable to other populations. The researcher can, however, put forth a good faith effort to allow other researchers to make such transfers to their study design (Shenton, 2004). This was accomplished by providing a detailed description of the research context and the assumptions made about the research. This allows readers to understand the study and be able to compare the data analysis with the phenomenon they see in their own studies (Shenton, 2004).

Dependability

Dependability is equivalent to reliability in quantitative studies. The researcher must describe the changes that took place during the study and how those changes affected the outcome of the study (Shenton, 2004). Dependability is directly related to credibility. Shenton (2004) argued that if a body of research is considered credible, then it is also dependable. Shenton further stated that this can be accomplished by using overlapping methods. I collected data using audio files, transcripts, and surveys. Further,

my in-depth explanation of the research methods enables future researchers to repeat the study and find similar results. Shenton (2004) referred to this type of research design as a prototype model.

Confirmability

Confirmability refers to the degree to which others can confirm or corroborate the results of the study (Shenton, 2004). This was accomplished by creating an audit trail noting the details of how data were collected and analyzed. I also kept a journal noting any reflections and ideas developed during the research process. Providing a detailed description of the research methods employed is necessary.

Results

The focus group audio files were uploaded and analyzed using NVivo 11 for Mac. The following section presents the participants' responses to the focus group questions. Participant statements are identified as African American (AA), Caucasian (C), or Hispanic (H). Figures 2-6 are word clouds created from the statements shared by the participants capturing the different themes that were identified. Key themes that emerged through analyzing the audio and transcripts with NVivo included the following:

- knowledge level,
- sense of urgency,
- vaccine safety,
- physician communication, and
- religious/ spiritual beliefs.

Knowledge Level

The analysis of the audio files and corresponding transcripts showed that there were varying levels of knowledge about HPV and the HPV vaccine. All participants were provided with the same HPV factsheet developed by the CDC (Appendix C). This document was mailed to all participants. Based upon the discussions surrounding the participants' initial thoughts on the HPV vaccine, it was obvious which mothers had more knowledge about HPV and/or the HPV vaccine. When the question, "what are your initial thoughts on the HPV vaccine?" was posed, the answers highlighted such knowledge differences. Some mothers reported that upon receiving the mailer, they decided to research further about HPV:

> I received the fact sheet sent in the mail. There was some information in there that I had heard before and there was some information that was new to me. So, I looked it up on the internet (C).
>
> What types of cancers does it help to prevent? I read it prevent two types of HPV that causes 70% of cervical cancer, I thought it did not cover all 4 types of HPV. It helps that it protects against two types of HPV. I think the stats on it look pretty good (H).
>
> Is it too late if I didn't get the second shot for my daughters? Is that something that I can go back to do or is it too late? No one ever followed up with me (AA).

Some mothers stated that the mailer sparked conversation with their husbands about the vaccine:

> I asked my husband his thoughts. He is an ER doctor. He doesn't particularly agree with the HPV vaccine. We have heard about so many stories about young girls who were perfectly normal and then after the shots, she began to have mysterious symptoms (W).

Other mothers did not mention the information within the mailer or the role the mailer played in their research, but made comments about how little they knew about the vaccine prior to the mailer:

> I'm not too sure [about the vaccine]. I haven't heard much about it other than what you mailed to me (AA).
>
> Only one of my daughters has been offered the vaccine and by the time she was old enough to be offered it I just didn't know enough about it. I was not given any paperwork on the vaccine or the virus. Just offered the vaccine (C).
>
> Some people are on the fence and maybe need more info about side effects (C).

An interesting perspective was shared regarding how a parent's decision affects a child's feeling about the decision later in life and how knowing more about this concept would be beneficial:

> I need to know more long term side effects, kids who have been vaccinated and are now reaching young adult age, what's going on with their body and what symptoms are they experiencing if any at all? How do those kids perceive it that their parents gave them something that they probably didn't even know that they were getting? (AA).

It appeared that the knowledge level was directly related to education level. Across the racial groups, the comments made involving knowledge level were more aligned with facts and mother's having sought further knowledge. In comparison, mother's with lower levels of education were more likely to report that most of what they know about HPV and the vaccine came from the CDC factsheet mailed to them. Figure 2 is a word cloud depicting the key words or phrases captured in the discussion about knowledge level.

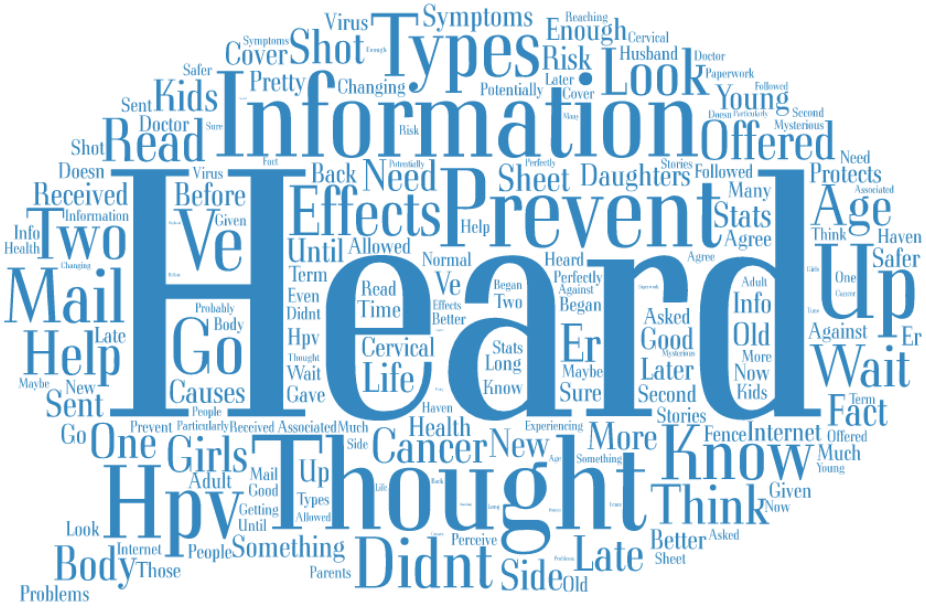

Figure 2. Knowledge level word cloud. Created with www.tagul.com

Sense of Urgency

The majority of mothers reported that their daughters had not been vaccinated (81%). Many mothers reported that the reason they did not get their daughters vaccinated was because they did not believe that they needed to do so at this point. They did not feel

that their daughters needed the vaccine right now because they were not sexually active, and therefore not exposed to HPV:

> She is 10, so I just don't feel that at this point this is a concern for us (AA).
>
> Is it just as effective if you get the vaccine later in life? What if you waited? I know it's better when they are potentially at risk, but they are allowed to get it until age 26, I think. Their bodies are changing, would it be safer if you wait. I've read about girls who've had health problems associated with vaccine (H).
>
> Say I don't vaccinate now, would I be interested in getting her vaccinated as a young adult or would she be interested in getting vaccinated when she can make that choice for herself? You can get the vaccination as a young adult in your early 20s so why not let them make that choice then? (AA).
>
> I don't see my daughter as a sexual being yet (AA).
>
> For my kids, I feel it's a bit premature. I would like to wait closer to when there is more information as far as the risks versus the benefits. I think it's still fairly new and still being researched. Currently I think my kids are not at risk because they are pre-teens. I would rather wait for more information to be available before I entertain it (AA).

The idea of being against or in support of childhood vaccinations was discussed and how this affected the decision regarding the HPV vaccine:

> I have not had my daughter vaccinated. I feel like it is a vaccination for something that we are not actively concerned about right now. I feel like this is a

crucial period but we are not concerned. We are probably more concerned with over vaccinating (AA).

Some mothers will get their daughters vaccinated because they feel like maybe their daughters more in contact with or more likely for it to happen or some mothers are just early advocates of early vaccination (C).

I am concerned about most vaccinations and the risk that goes along with them especially when there is a new vaccination on the market. I feel my daughter is not in immediate risk (C).

I feel like we may over vaccinate our children. Just with the plethora of information you can find about vaccinations, I think sometimes in this day and age, because we know more, we do more. And that's not always the right answer (AA).

My husband and I are very careful about what we read and making decisions. I don't know if pumping her full of this vaccine at 9 or 10 would necessarily be something that will be relevant 10-20 years from now. Things mutate, they spread so we don't think that's the right idea right now. How appropriate is it at this point in her life? (AA).

There is a trend towards not vaccinating at all. Some people overly research and that might turn them off to the vaccine (C).

Though not asked directly, during one of the African American focus groups, a conversation took place about the perceptions of mothers of different races and their views on childhood vaccinations:

More Caucasians jump on board to get their kids vaccinated as I talk to them more they may be a bit more proactive and a bit more trusting (AA).

Additional African American mothers responded by sharing her perception about trust:

We [African American] have a long history with being mistreated or under-treated when it comes to health care. We are not as trusting of new medicines and treatments because our ancestors were used as test subjects for research. We don't want to fall into that same trap again (AA).

New treatments and drugs are frightening. If our kids aren't sick right now, we don't always see how risking their future health is a good thing (AA)

Other mothers expressed that they felt that the decision was pressing, however they did not feel as though they had enough information about the short-term and long-term side effects of the vaccine and the effectiveness of the vaccine itself:

How do we know that it won't cause certain other illnesses? (H).

It scares me and makes me think maybe I should have my children get the vaccine to protect them. I don't know who they are gonna marry or the background on that person. Scary and alarming. Am I harming them by not doing it? (H).

It's like any other sexually transmitted disease. It's a choice; it's a lifestyle choice. I would rather teach my child the proper way of protecting themselves as opposed to giving them a quick fix. Other than HPV they are putting themselves at risk for all these other things that might be life threatening as well. So I may

prevent one but then falsely make them think that they are super protected and make some wrong choices also (AA).

I would want to teach more preventive as far as the use of condoms as opposed to going that route [vaccination] when I don't really know how my child is going to behave in that young adult area. I need more information about long-term side effects because there are some other scary things out there too (H).

The vaccine can give you the illusion that you are protected. There are so many strands out there but the vaccination only covers 2 or 3 strands so you can still get a strand that's not covered. So I think as time goes on maybe there will be a vaccination that covers more of the common strands, because viruses change and mutate so I would be concerned that I think she's vaccinated and she's not really protected at all (H).

One mother introduced the idea of how this would have or could have played a role in her life as a young girl:

Has this [HPV virus] mutated ever? I didn't have the HPV vaccine when I was younger and would have it been relevant 30 years ago. Are we fighting the same strains that I could've been infected with? (AA)

Some mothers shared their experience with a loved one having had cervical cancer and how that has shaped their views on the HPV vaccine:

I think the shot is a good idea, I just never took my daughter back to get the second shot. I wanted to prevent cancer because my mother died from cancer (AA).

> I'm concerned because it happened to my mother. I don't know if her cancer was caused by HPV, but what if it was and my daughter gets it and I did nothing about it to prevent her from getting sick? (H).

Many groups discussed how they view the vaccine the same was as they view getting their daughter on birth control. The quote below highlights the message shared by most of the participants:

> Some mothers will not get their daughters vaccinated because they are scared of the unknown. Almost as if some may think you are setting your child up for problems … like going on birth control before your child is even sexually active… like expecting something bad (AA).

Figure 3 is the word cloud highlighting the words or phrases related to the theme of urgency.

Figure 3. Sense of urgency word cloud. Created with www.tagul.com

Vaccine Safety

An overwhelming majority of the mothers expressed a great deal of concern regarding the HPV vaccine. Figure 4 is the word cloud for the theme of vaccine safety. Most of the concerns were about how safe the vaccine was. Mothers shared stories that they read or heard about young girls being perfectly healthy and then after taking the vaccines, they were no longer able to participate in extra-curricular activities. They

shared how they know the linkage between the vaccine and the mysterious illnesses with the cases they read about had not been proven, yet they were still afraid that this could potentially happen to their seemingly healthy daughters.

The mother's with medical backgrounds or who were married to someone in the medical field shared examples that they read about or learned about:

> Some of the side effects I heard were that the vaccine can cause viruses that were dormant in the body to activate (H).
>
> I heard that something like Lyme's disease can be the result of the vaccine (C).
>
> If the vaccine does not cover all of the strains of HPV, then why should I take a chance with my daughter experiencing side effects and maybe not even being protected against the strain that could cause her to have cancer anyway (C).
>
> I'm not 100% sure of the vaccine. I'm not sure. I just haven't made the decision to have it done and my husband being a physician, he isn't sold on it 100% either (C).
>
> I read that rare cases have caused Guillain-Barre Syndrome and other simple side effects like localized side effects from a vaccination (AA).

Most mothers expressed that they did not know enough about the vaccine, and therefore could not make a sound decision about getting their daughters vaccinated:

> I would be more likely to get them vaccinated since it is sexually transmitted if I knew more about the long-term effects (C).

I'm a little hesitant because I'm not sure that it's been on the market long enough. I've gotten conflicting stories of people who have received it and had side effects that have affected them for a while (H).

How long has this vaccine been on the market? That's what I've been trying to figure out. When I'm making a decision, I want to know how many people have received it and how many people have had side effects from the vaccine. Maybe its fear of side effects from reading stories about people who have had side effects and they can't for sure link it to the vaccine (H).

I've read a few articles about kids that were completely normal and after the second or third round of the vaccine, they started showing signs of complete sickness, illness, going to several different doctors, tests upon tests and nothing conclusive. I've read some articles about that. My child might have something dormant in their body and wind up sick after they've received the vaccine. That alarms me (C).

More information is needed on what could happen if they are vaccinated this early… the risks are not put out there enough. It's always minimized or a very fine line (H).

Figure 4. Vaccine safety word cloud. Created with www.tagul.com

Physician Communication

The theme about physician communication presented in several parts of the focus group discussions. Figure 5 is the word cloud for the theme of physician communication. When mothers shared why they had not gotten their daughter's vaccinated, some mothers describe the conversation with their daughter's doctor:

He only offered the vaccine to me once. He did not give much information to me (H).

I found it strange that she offered it to my son and not my daughter. I remember distinctly that she said 'you never know what situation your son might find himself in.' I found that to be rather insulting. Why would my daughter not need it as much as my son? What are you saying about my son and how I am raising him differently from my daughter? They both hear the same message from my husband and I. They are being raised with the same values (AA).

My pediatrician did bring it up at our visit last fall. We've talked about it. I'm taken aback with the sexuality of it. Most of the conversation was about the sexual unknowns. I don't think I'm ready to ascribe that to my kids. To just be honest, that's what stood out to me- that it was about sexually transmitted diseases. My kids are not sexually active so I just did not feel like it was the right thing for us (AA).

My pediatrician gave me information that says it's so wide spread. It seems like the common cold, can I be concerned about it sure, I'm concerned she will get a cold, that she will fall and break her leg, I'm concerned about all of those things to the same degree as HPV (AA).

It depends on if you go to an Ob/Gyn regularly and you get their opinions and if they research information about all those things (C).

Some mothers were unclear about whether they had any conversation about the vaccination or if their pediatrician's had an opinion:

I don't believe I have had my daughter vaccinated. I don't think the doctor offered it. I'm not for sure about that vaccine so I don't think they offered it (H).

I can't remember why I didn't get them the second shot but I don't know if I could go back. The doctor did not give much information and because he did not follow up, I assumed I could not go back to get her the other shot (AA).

When asked about why they thought other mother's would get their daughters vaccinated, some responses made were:

If the doctor recommends it, you do what they say. I guess some moms just trust the doctor's opinion and act without doing their own research (C).

My daughter's physician is 100% in support of the vaccine. She feels that all girls should be vaccinated. I haven't done so because I just don't have all of my questions answered yet (C).

Some mothers will get their daughters vaccinated because they have been encouraged by their doctor. Some people are persuaded easily by doctors' opinions (H).

You go to the doctor and the doctor recommends it. You think you're doing what's best for your daughter so you do it. Mothers in general want to do the right thing especially if their doctor recommends it. I would say you get them vaccinated without doing very much research (C).

I've asked my own Ob/Gyn and she's completely for it (C).

Figure 5. Physician communication word cloud. Created with www.tagul.com

Religious/ Spiritual Beliefs

This theme was present in just about every question discussed. Figure 6 captures the phrases or words most often shared when there was discussion on how religion is related to the research. Religion was brought up when the mothers shared their initial thoughts about the vaccine, why they did not get their daughters vaccinated, why they thought other mothers would not get their daughters vaccinated, when discussing their concerns about their daughter's becoming infected with HPV, as well the discussions about HPV being sexually transmitted and the portrayal of the vaccine as promoting unsafe sexual practices:

> We raise our children to treat their bodies like temples. They know that sex before marriage is not acceptable (AA).
>
> We focus more on how God expects us to treat our bodies (H).
>
> I am not concerned about my daughter's health. It is up to God what happens to our health (H).
>
> We are praying that we are teaching her holiness so that those things might be mitigated (AA).
>
> I think that there is this trigger that somehow promiscuity is just going to happen so we need to vaccinate against that. That's the underlying message I hear. We made the decision together- to not get her vaccinated. If we were to take the stance 'let's pump her full of something, that would go against God's message to us as parents. Promiscuity is more the issue over vaccinating her at nine (AA).

> Some mother's believe that focusing our daughters within The Word is key. If they are raised to know what He thinks about their actions, then we don't have to worry about HPV or the HPV vaccine (H).
>
> I feel this vaccine contradicts what God says. Just like birth control and abortions contradict what the Bible says (H).

Hispanic and African American groups had more in depth discussions about how their religious/ spiritual beliefs played a role in their decision-making process.

Figure 6. Religious/spiritual beliefs word cloud. Created with www.tagul.com.

Summary

Qualitative methodology was used to conduct this research study. Data were collected through six focus groups. Focus groups represented the three major racial/ ethnic groups in San Antonio. There were two focus groups for each of the racial groups: African American, Caucasian, and Hispanic. The data was analyzed using NVivo. Five themes were identified from the audio and transcript files of the six focus groups.

Chapter 5 details the research findings with discussion, limitations, recommendations, and future implications of the study.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of the study was to learn about the beliefs, attitudes, and knowledge of HPV and HPV vaccines among mothers with preadolescent and adolescent daughters. This research may provide a greater insight for health care professionals caring for families. Lack of knowledge, fear of side effects, and lack of urgency were key areas needing to be addressed as messages continue to be created and tailored for specific populations.

Research Questions

The research questions for this study were answered by identifying the themes within the data. The questions in the participant survey (Appendix E) and focus group protocol (Appendix F) were designed to elicit data to answer the four research questions.

RQ1 addressed the differences in beliefs of the three racial/ethnic groups in regards to the message the HPV vaccine portrays. Based on the discussion about several of the questions, there were not many differences noted between the groups. The theme of spiritual and religious beliefs presented with the Hispanic and African American groups. Most of the Hispanic mothers shared their thoughts from a religious perspective. African American mothers shared beliefs mostly associated with religion and trust of the medical community. Caucasian mothers mostly reported that their beliefs were based mainly on lack of knowledge, fear of side effects, and communication with their physician.

RQ2 addressed how a mother's health beliefs shape the critical conversations with her daughter regarding reproductive health and sexual activity. All mothers reported that

they felt comfortable with discussing sexual activity with their daughters. A common response was that the mothers felt comfortable discussing such issues; however, they did not feel that there was a need to do so in regards to sexually transmitted diseases. Many mothers reported that their conversations had focused on the female body, changes that the body will go through, and inappropriate interactions with others when it comes to their private areas.

Several Hispanic mothers stated that they did not initiate conversations about sexuality with their daughters. If their daughters asked about certain things, they communicated with them, but they did not initiate the conversation. Caucasian mothers reported that they not only initiated conversations, but also encouraged their daughters to feel comfortable talking about such issues. African American mothers shared that they too initiated the conversations; however, they were cognizant of how their daughters responded and were mindful of whether they should probe for more information.

RQ3 addressed how cultural values and beliefs influence cervical cancer screening practices. Of the three racial/ethnic groups, the two Caucasian groups were the least likely to identify cultural values or beliefs that contributed to their decision about getting their daughters vaccinated and screened for cervical cancer. The common value or belief shared among the Caucasian mothers was that if they felt the vaccine was safe and knew more about the vaccine's long-term effects, they would get the vaccine for their daughter. There were no cultural values shared or discussed.

Both African American focus groups reported the idea of trust being an important influence. There was discussion about historical medical cases that showed that African

Americans have been and should still be wary of what doctors recommend for the health of their family. Another idea that was unique to the African American groups was the thought that getting their daughters vaccinated before they were sexually active was viewed the same way as putting their daughters on birth control before they were sexually active. Some African American mothers disagreed with doing either before their daughters were sexually active. They shared that this might send a message of giving permission to engage in sexual activity. The discussion also included some mothers sharing that doing either of these before their daughters truly needed them could cause their daughters to feel as though they did not trust them when the daughters had reported that they were not sexually active.

Other African American mothers shared that they would rather be proactive than reactive and that they might get their daughters vaccinated and put them on birth control if they felt their daughters were at risk. African American mothers who reported that they felt their daughter might be at risk for becoming sexually active reported that they had their daughters vaccinated.

Hispanic mothers shared some cultural beliefs and values that were specific to the Hispanic culture. One belief was the importance of accepting God's will. If it is God's will to become pregnant, then it is important not to question his plan. Having a baby was not seen as a negative outcome to becoming sexually active. On the other hand, getting HPV was seen as not being clean or making poor choices. A few comments were made that young girls who are raised with solid values and morals would not get an STD like HPV, something that could kill them. The focus was more on what message their

daughter having HPV would send to their community. Concerns about sleeping around, being sneaky, and being involved with experienced boys were shared. Mothers expressed that they would feel to blame if their daughters became infected with HPV, and they would feel that they did not impress upon their daughters the values of their family.

RQ4 addressed the barriers that may exist within each of the groups studied. The main barrier shared by all three racial/ethnic groups was the fact that there was not enough communication about the short-term and long-term side effects of getting their daughters vaccinated. The mothers who reported having done their own research shared that they did so in an effort to answer any questions they had about side effects and the effectiveness of the vaccine overall. Self-educating led to many mothers interpreting what they read and drawing their own conclusions about whether the risks outweighed the benefits as they pertained to their daughters.

The only barriers that were specific to the African American and Hispanic groups were the cultural beliefs and values previously discussed. As stated earlier, there were no cultural barriers specific to Caucasian mothers. The barriers reported by Caucasian mothers were shared by all mothers.

Interpretation of Findings

Research

Previous studies indicated that there are various barriers present that cause parents to choose not to have their daughters vaccinated against HPV. The intent of this study was to examine how those barriers may differ according to racial/ethnic group. These differences are important in developing effective public health messages and programs

designed to increase HPV vaccination and reduce cervical cancer morbidity and mortality rates. This study addressed the cultural beliefs and values that influence Hispanic and African American mothers as they make decisions about their daughter's reproductive health. Taking these findings into consideration is critical when addressing the racial disparities associated with cervical cancer morbidity and mortality rates. Hispanic and African American women are less likely to receive the HPV vaccine, less likely to have proper HPV and cervical cancer screening, and more likely to be diagnosed with cervical cancer (Tortolero-Luna et al., 1998).

Limited knowledge continues to be a barrier, as seen in previous studies pertaining to cancer screening and prevention practices (Tortolero-Luna et al., 1998). Similar to findings from previous studies, the parents in this study reported that their greatest concerns were the safety of the vaccine and the possible side effects of the vaccine. Basu and Mittal (2011) conducted a similar study and concluded that affluent, well-educated parents need less comprehensive educational opportunities to learn about the HPV vaccine. My study did not capture such results across similar socioeconomic classes. The differences seen in the barriers and beliefs between the three racial/ethnic groups were not specific to levels of affluence. There was more of a correlation between racial groups than between socioeconomic statuses.

Another interesting finding is that the mean age of the participants' daughters was 11.6 years. The recommended age for vaccination of young girls is 9-12 years of age. It is concerning that most of the participant's had daughters who were at the targeted age group for vaccination, however only 19% of the daughters were vaccinated. The findings

from this study suggest that it is imperative to develop more effective public health messages in an effort to ensure young girls are vaccinated at the appropriate age.

The major themes identified were further analyzed based on the constructs of the health belief model: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and cues to action.

Perceived Susceptibility to HPV

The HBM states that people are more likely to take the necessary preventive care actions if they perceive that they are susceptible to the condition (Chen et al., 2011). In my study, the theme "sense of urgency" was identified. Most participants felt as though their daughters were not at immediate risk of becoming infected with HPV. If the mothers did not feel that their daughters were susceptible to HPV, they were less likely to feel the need to get their daughter's vaccinated. Most mothers who researched the virus and its relationship to cervical cancer did so because they wanted to be sure they had sufficient background knowledge to either support their current decision or provide more background to help them make a more informed decision.

Perceived Severity of HPV

The framework for this study indicated that mothers are more likely to get their daughters vaccinated against HPV if they perceive that HPV and its potential consequences, cancer and possibly death, are serious (Chen et al., 2011). All mothers acknowledged that cancer and death were very serious. A few mothers shared that they had lost a loved one from cervical cancer and they knew very well the severity of cancer. There was discussion about how prevalent HPV was within the general population. The

idea that not all people who have HPV develop cancer shifted the perceived severity of the virus in comparison to cervical cancer.

Perceived Benefits of the HPV Vaccine

Mothers who believe that the HPV vaccine is beneficial are more likely to get their daughters vaccinated against HPV (Chen et al., 2011). A small group of mothers in my study shared that they thought the vaccine was overwhelmingly beneficial. All mothers saw the potential benefit of the vaccine; however, they were focused on how the risks could potentially outweigh the benefits. All mothers reported that they felt that they did not know enough information about the side effects or the vaccine's effectiveness in preventing HPV and ultimately cancer.

Perceived Barriers to the HPV Vaccine

If mothers believe that there are minimal barriers to getting their daughters vaccinated, their daughters will be vaccinated against HPV (Chen et al., 2011). Several barriers were identified by the participants. Knowledge level about the risks was the primary barrier. Other barriers were trust of the medical community, fear, lack of effective physician communication, and religious beliefs.

Cues to Action

If there are known, effective public health strategies to activate a mother's readiness to get her daughter vaccinated, she is more inclined to take her daughters to get vaccinated (Chen et al., 2011). Current public health strategies do not appear to be very effective at addressing the concerns and knowledge level of mothers. Strategies currently

in place were not discussed because most mothers felt as though the medical field did not know or share enough about the vaccine with the public.

Limitations of the Study

A major limitation of this study was the exclusion of non-English speaking participants. Excluding Hispanic participants who only spoke Spanish limited the diversity within the Hispanic focus groups as well as their experiences. Spanish is the language of choice for many Hispanics, and it would have been beneficial to be able to include Spanish-speaking participants.

A second limitation was not having a moderator of the same racial/ethnic group as the participants. Discussions were more candid, and the participants appeared to be more comfortable and forthcoming with their thoughts and concerns when the moderator was of the same racial group.

Another limitation was the inability to guarantee 100% confidentiality. The goal was to allow for interaction and deeper discussion between participants within the focus groups. However, there was no guarantee that all participants felt comfortable enough to shares their personal experiences or opinions within the group.

Recommendations

Future studies should include non-English speaking participants. This would provide an opportunity to determine whether language is a barrier to prevention or treatment. It would also allow for participants to communicate in their native language and possibly increase the level of comfort and trust within the focus groups. Another recommendation would be to include parents of male children and evaluate whether the

beliefs differ and how such beliefs translate into whether male children are vaccinated against HPV. A third suggestion would be to use focus groups in tandem with one-on-one interviews. This would allow for both deeper exploration as well as the opportunity for participants to share personal experiences or feelings in confidence.

Implications

When evaluating any public health system or initiative, it is imperative that one knows how all key stakeholders will be affected. Parents are the first line of defense when it comes to the decisions made about their children's health. If parents do not feel they have the necessary information or do not feel their children are at risk, they typically will not take action. Learning about the health beliefs and knowledge level of parents sheds some light on the actual and potential barriers preventing parents from taking action. Specific to this study, learning about how these beliefs and knowledge affect whether a mother decides to get her adolescent daughter vaccinated against HPV may positively contribute to a public health initiative designed to address the racial disparities present within the public health system. This study may not only help the parents of young girls, it may also help these same young girls as they become women and start a family of their own. Other implications include reducing health care costs associated with treating HPV and cancer. The financial burden is reason enough to ensure public health messages address the beliefs and knowledge level of all stakeholders.

The implications for positive social change include a better understanding of the health beliefs of minority parents and how these beliefs influence their decision on whether to get their daughter vaccinated against the Human Papillomavirus. Ultimately,

the knowledge gained from this research will help to develop more effective public health messages providing the necessary education regarding cervical cancer prevention, specifically targeting minority adolescent females and their parents.

Based on the findings of this research, lack of knowledge about the risks and benefits of the HPV vaccine has led to the rate of vaccination to be lower than desired. Public health messages and interventions should focus on addressing risks and benefits. These messages need to be further tailored to address the cultural beliefs and values specific to the different racial/ ethnic groups.

Messages targeting African Americans should consider the lack of trust of the medical community due to negative historical cases that have affected other African Americans. These messages should also take into consideration the concerns African American mothers have regarding the message the HPV vaccine portrays in regards to promoting promiscuity or forcing parents to view their young daughters in an uncomfortable manner. Lastly, public health messages should capture the spiritual influences present within the African American community.

Messages targeting Hispanics need to address the perception of sexually transmitted diseases in comparison to teenage pregnancy. Pregnancy is accepted more so than STDs. The fear of STDs needs to be addressed in public health messages for the Hispanic community. Similar to African Americans, Hispanics would also benefit from religious or spiritual messaging.

Caucasians did not have any barriers specific to their racial group. The messages targeting Caucasians should be sure to thoroughly address risks, benefits, and potential

misconceptions. Caucasians were more likely to report having done their own extensive research with limited or misinterpreted conclusions.

Conclusion

Each research question was revisited and discussed as they pertained to the data collected from the focus groups. Hispanic and African American mothers shared their thoughts from a religious perspective. African American mothers also discussed their hesitance in trusting the medical community. Caucasian mothers' beliefs were focused on knowledge level, fear, and physician communication. All mothers shared that they were comfortable with discussing sexual activity with their daughters, however their conversations have yet to include sexually transmitted diseases. Caucasian and African American mothers reported that typically they initiate these conversations; whereas Hispanic mothers shared that they allow their daughters to guide the conversations. Caucasian mothers did not associate their decisions about vaccinating their daughters to any specific cultural beliefs or values. Hispanic mothers shared their views on HPV in comparison to getting pregnant. They stated that they felt HPV was more of a concern than pregnancy. African American mothers shared that getting their daughters vaccinated before they were sexually active carried the same message as putting their daughters on birth control. The overall message they echoed was encouraging promiscuity or sexual activity. The barriers present within each racial/ ethnic group were previously addressed by the other three research questions.

Minority parents held cultural and spiritual beliefs about vaccinating their daughters against a sexually transmitted disease before the parents believed that their

daughters were at risk for being exposed to STDs such as HPV. These beliefs presented as barriers to initiating the desired HPV prevention and screening practices. Gaps in the current knowledge of all parents exist and must be thoroughly addressed for all racial/ ethnic groups. Future educational programs need to not only address the gaps in knowledge but also shape and package public health messages with sensitivity to cultural and spiritual concerns.

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Appendix A: Participant Invitation Letter

HPV VACCINATION: A MOTHER'S CHOICE

You are formally being invited to participate in a research study. This letter contains information included to help you make a decision whether or not you want to participate. If at any point you have a question, please feel free to ask.

Why have you been selected?

Your participation is requested because you have a daughter age 9-12.

Why is this study being done?

There are currently two FDA-approved vaccinations available for the human papillomavirus, or HPV. This virus is a sexually transmitted disease known to cause cervical cancer. The current recommendations are for the vaccine to be given to young girls before they become sexually active; the specific age being ages 9-12. The purpose of this research is learn (a) what mother's know about HPV and (b) what mother's believe about the HPV vaccine and getting their daughters vaccinated.

What is the plan for this research study?

Focus groups will be used for this study. Each group will have 12 mothers or fewer who have daughters ages 9-12. During the focus group, you will be discussing the HPV vaccination. You will be asked about your knowledge and beliefs about HPV and the

HPV vaccine. There will be an information sheet mailed to you prior to the focus group session that will have information on HPV and the HPV vaccine. This will help to answer many common questions.

The focus group session will last approximately 2 hours. Food (snacks) and drinks will be provided during the focus group sessions.

Your comments will be audiotaped during the session. They will be properly secured and reviewed only by the researcher. The tapes will be destroyed after the completion of the study. No information will be associated with you specifically.

What are the possible risks of being in this research study?

The risks associated with this research study are that you will be sharing your thoughts with other mothers who have daughters your age. You will also be speaking about your daughter's sexual activity and sexually transmitted diseases.

What are the possible benefits of participating?

You will receive information on HPV and the HPV vaccination. The focus group will also provide an environment where you and other mother's can provide support and share thoughts.

How might the results of this study help others?

Others will gain more knowledge about HPV and the HPV vaccine. There is also the possibility of a decreased rate of cervical cancer amongst young girls and women due to an increased vaccination rate. Lastly, the community will have information available about the questions and concerns parents might have regarding their daughter's reproductive health.

How will your information be protected?

The only people who will have access to any of the research records are the researcher, the Institutional Review Board (IRB), and any other agency required by law. The information from this research study could be formally published in scientific journals but your identity will remain confidential.

You will also be asked to keep the identities and comments of the other participants confidential.

Documentation of Informed Consent

You are freely making a decision to be in this research study. Signing this form means that (1) you have read and understood this consent form, (2) you have had the consent form explained to you, (3) you have had your questions answered and (4) you have decided to be in the research study.

If you have any questions during the study, please contact the investigator listed below. You will be given a copy of this consent for your records.

Signature of Participant: _____ Date: _____ Time: _____

My signature certifies that all elements of informed consent described on this consent form have been explained fully to the subject. In my judgment, the participant possesses the legal capacity to give informed consent to participate in this research and is voluntarily and knowingly giving informed consent to participate.

Signature of Investigator: _____ Date: _____

Authorized Study Personnel

Principal Investigator: Aja Gardner

Email: XXXXX@waldenu.edu

Potential Participant Information Document

Participant Name: _____

Age of Daughter(s): _____

Ethnicity/ Race (Circle all that apply):

Hispanic African American Caucasian Asian Native American

Participant Mailing Address:

_____

Street # and Name (Apt. #) City Zip Code

Participant Phone Number: (cell) _____ (home) _____

Days of the Week Available (circle all that apply and write in best times for those days):

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
_____	_____	_____	_____	_____	_____

Please place in locked box.

Appendix B: Focus Group Meeting Reminder

Dear Participant:

I thank you for agreeing to participate in a focus group session regarding the human papillomavirus (HPV) and the HPV vaccination.

This vaccination helps to prevent cervical cancer in women. The vaccination must be given to girls before they become sexually active. The current recommended age for this vaccination ages 9-12. You were requested to participate in this focus group because you have a daughter that age.

The focus group will be held on (insert date). The session will include other mothers with daughters your child's age as well as a moderator who will help to keep the conversation on track. This session will give you an opportunity to discuss with other mothers your thoughts about and experiences with the HPV vaccine. Your comments will help to develop better ways to inform other mothers about the vaccine as well as increase the likelihood of young girls being vaccinated and potentially saved from cervical cancer.

Date: to be inserted
Time: to be inserted
Location: to be inserted

Snacks and drinks will be provided.

Your participation is completely voluntary. I greatly appreciate you agreeing to share your thoughts and potentially helping other mothers and daughters. Anything that you share during the meeting will be kept confidential. No information will be provided that would link you personally.

If for some reason you are not able to make this meeting, please let me know.
I have included information about HPV and the HPV vaccine. This information will be discussed during the focus group session.

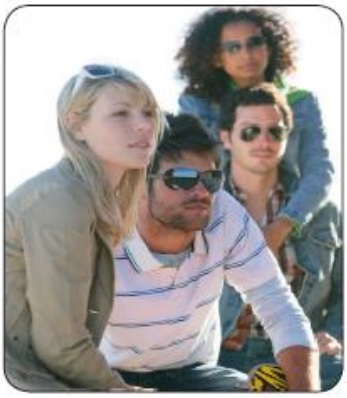
Sincerely,

Aja Gardner
Email: XXXXXX@waldenu.edu

Appendix C: HPV Vaccine Questions and Answers

Genital HPV Infection – CDC Fact Sheet

Human papillomavirus (HPV) is the most common sexually transmitted infection in the United States. Some health effects caused by HPV can be prevented with vaccines.



What is HPV?

HPV is the most common sexually transmitted infection (STI). HPV is a different virus than HIV and HSV (herpes). HPV is so common that nearly all sexually active men and women get it at some point in their lives. There are many different types of HPV. Some types can cause health problems including genital warts and cancers. But there are vaccines that can stop these health problems from happening.

How is HPV spread?

You can get HPV by having oral, vaginal, or anal sex with someone who has the virus. It is most commonly spread during vaginal or anal sex. HPV can be passed even when an infected person has no signs or symptoms.

Anyone who is sexually active can get HPV, even if you have had sex with only one person. You also can develop symptoms years after you have sex with someone who is infected making it hard to know when you first became infected.

Does HPV cause health problems?

In most cases, HPV goes away on its own and does not cause any health problems. But when HPV does not go away, it can cause health problems like genital warts and cancer.

Genital warts usually appear as a small bump or group of bumps in the genital area. They can be small or large, raised or flat, or shaped like a cauliflower. A healthcare provider can usually diagnose warts by looking at the genital area.

Does HPV cause cancer?

HPV can cause cervical and other cancers including cancer of the vulva, vagina, penis, or anus. It can also cause cancer in the back of the throat, including the base of the tongue and tonsils (called oropharyngeal cancer).

Cancer often takes years, even decades, to develop after a person gets HPV. The types of HPV that can cause genital warts are not the same as the types of HPV that can cause cancers.

There is no way to know which people who have HPV will develop cancer or other health problems. People with weak immune systems may be less able to fight off HPV and more likely to develop health problems from it, this includes people with HIV/AIDS.

How can I avoid HPV and the health problems it can cause?

You can do several things to lower your chances of getting HPV.

Get vaccinated. HPV vaccines are safe and effective. They can protect males and females against diseases (including cancers) caused by HPV when given in the recommended age groups (see "Who should get vaccinated?" below).
HPV vaccines are given in three shots over six months; it is important to get all three doses.

Get screened for cervical cancer. Routine screening for women aged 21 to 65 years old can prevent cervical cancer.

If you are sexually active

- Use latex condoms the right way every time you have sex. This can lower your chances of getting HPV. But HPV can infect areas that are

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Division of STD Prevention

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not covered by a condom - so condoms may not give full protection against getting HPV;

- Be in a mutually monogamous relationship – or have sex only with someone who only has sex with you.

Who should get vaccinated?

All boys and girls ages 11 or 12 years should get vaccinated.

Catch-up vaccines are recommended for males through age 21 and for females through age 26, if they did not get vaccinated when they were younger.

The vaccine is also recommended for gay and bisexual men (or any man who has sex with a man) through age 26. It is also recommended for men and women with compromised immune systems (including people living with HIV/AIDS) through age 26, if they did not get fully vaccinated when they were younger.

How do I know if I have HPV?

There is no test to find out a person's "HPV status." Also, there is no approved HPV test to find HPV in the mouth or throat.

There are HPV tests that can be used to screen for cervical cancer. These tests are recommended for screening only in women aged 30 years and older. They are not recommended to screen men, adolescents, or women under the age of 30 years.

Most people with HPV do not know they are infected and never develop symptoms or health problems from it. Some people find out they have HPV when they get genital warts. Women may find out they have HPV when they get an abnormal Pap test result (during cervical cancer screening). Others may only find out once they've developed more serious problems from HPV, such as cancers.

How common is HPV and the health problems caused by HPV?

HPV (the virus): About 79 million Americans are currently infected with HPV. About 14 million people become newly infected each year. HPV is so common that most sexually-active men and women will get at least one type of HPV at some point in their lives.

Health problems related to HPV include genital warts and cervical cancer.

Genital warts: About 360,000 people in the United States get genital warts each year.

Cervical cancer: More than 11,000 women in the United States get cervical cancer each year.

There are other conditions and cancers caused by HPV that occur in persons living in the United States.

I'm pregnant. Will having HPV affect my pregnancy?

If you are pregnant and have HPV, you can get genital warts or develop abnormal cell changes on your cervix. Abnormal cell changes can be found with routine cervical cancer screening. You should get routine cervical cancer screening even when you are pregnant.

Can I be treated for HPV or health problems caused by HPV?

There is no treatment for the virus itself. However, there are treatments for the health problems that HPV can cause:

1. Genital warts can be treated by you or your physician. If left untreated, genital warts may go away, stay the same, or grow in size or number.
2. Cervical precancer can be treated. Women who get routine Pap tests and follow up as needed can identify problems before cancer develops. Prevention is always better than treatment. For more information visit www.cancer.org.
3. Other HPV-related cancers are also more treatable when diagnosed and treated early. For more information visit www.cancer.org.

Where can I get more information?

STD information
http://www.cdc.gov/std/

HPV Information
http://www.cdc.gov/hpv/

HPV Vaccination
http://www.cdc.gov/vaccines/vpd-vac/hpv/

Cancer Information
http://www.cdc.gov/cancer/

Cervical Cancer Screening
http://www.cdc.gov/cancer/cervical/basic_info/screening.htm

CDC's National Breast and Cervical Cancer Early Detection Program
http://www.cdc.gov/cancer/nbccedp/

CDC-INFO Contact Center
1-800-CDC-INFO
(1-800-232-4636)
Contact www.cdc.gov/info

CDC National Prevention Information Network (NPIN)
https://npin.cdc.gov/disease/stds
P.O. Box 6003
Rockville, MD 20849-6003
E-mail: npin-info@cdc.gov

National HPV and Cervical Cancer Prevention Resource Center
American Sexual Health Association (ASHA)
http://www.ashasexualhealth.org/stdsstis/hpv/
P.O. Box 13827
Research Triangle Park,
NC 27709-3827
1-800-783-9877

Appendix D: Focus Group Survey

The purpose of the study is to learn about the beliefs, attitudes, and knowledge on the Human Papillomavirus (HPV) and HPV vaccines among mothers with pre-adolescent and adolescent daughters. This research may provide a greater insight for healthcare professionals caring for families in our community.

Your response to each question is very important and all responses will be anonymous.

These questions will help gather information about you and your background.

1. What is your age? _____

2. What is your race/ethnicity? (check one)

American Indian	□
Asian	□
Black or African American	□
Hispanic or Latino	□
Native American or Pacific Islander	□
White or Caucasian	□
Other	□

3. What is your highest level of education completed? (check one)

Elementary (0 to 8 years)	□
Some high school (1 to 3 years)	□
High school graduate (4 years)	□
Some college (1 to 3 years)	□
College graduate (4 or more years)	□

4. What is your approximate yearly household income? (check one)

Under $10,000	□
$10,000 to less than $20,000	□
$20,000 to less than $35,000	□
$35,000 to less than $50,000	□
$50,000 to less than $75,000	□
$75,000 to less than $100,000	□
$100,000 or more	□

5. What is your religious affiliation? (check one)

Catholic	□	
Protestant	□	
Jewish	□	
Muslim	□	
Buddhist	□	
Christian	□	
None	□	
Other	□	Please specify _____

6. How often do you attend religious services? (check one)

Rarely or Never	□
A few Times a Year	□
1-3 Times a Month	□
Once a Week	□
More than Once a Week	□

7. What is your marital status? (check one)

Never Married	□
Married	□
Separated	□
Divorced	□
Widowed	□

8. What are the age(s) of your daughter(s)? _____

9. Do you have some form of health insurance? (check one)

Yes	□
No	□

10. Have any of your daughters ever received the HPV vaccine? (check one)

Yes	□
No	□

11. Has anyone close to you ever had cervical cancer? (check one)

Yes	□
No	□

Appendix E: Focus Group Protocol

1. Tell me the ages and gender of your children.

2. What are your initial thoughts on the HPV vaccine?

3. Have you had your daughter(s) vaccinated?

4. Why did you have your daughter(s) vaccinated?

5. Why have you not had your daughter(s) vaccinated?

6. Why do you think some African American/ Hispanic/ Caucasian mothers will get their daughter(s) vaccinated?

7. Why do you think some African American/ Hispanic/ Caucasian mothers will not get their daughter(s) vaccinated?

8. What concerns do you have about HPV vaccinations?

9. How concerned are you about your daughter(s) becoming infected with HPV?

10. How does the fact that HPV is sexually transmitted affect your views on the HPV vaccine?

11. What information about HPV vaccinations would you find useful?

12. How do you feel about discussing sexual activity with you daughter(s)?

13. What are your thoughts about the vaccination and how it is portrayed as promoting unsafe sexual practices?

14. Is there anything that I have missed?