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**LATINO PARENTAL ACCEPTABILITY TOWARDS THE
HUMAN PAPILLOMA VIRUS VACCINE**

by

Linda Kondilis

A Dissertation Presented to the School of Psychology
of Nova Southeastern University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

NOVA SOUTHEASTERN UNIVERSITY

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This dissertation was submitted by Linda Kondilis under the direction of the Chairperson of the dissertation committee listed below. It was submitted to the School of Psychology and approved in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Clinical Psychology at Nova Southeastern University.

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ABSTRACT

This study examined parental acceptability of the Human Papilloma Virus (HPV) vaccination among Latino parents. The role that acculturation may play in Latino parents' acceptability of the vaccine was also examined. A survey conceptualized using the Health Belief Model and two acculturation measures were administered to participants ($N = 130$). Approximately 70% of parents endorsed that they would vaccinate their daughters with the HPV vaccine. A regression analysis revealed that perception of susceptibility, perception of seriousness, perception of benefit, and cues to action significantly predicted parental acceptability, with 57% of the variance accounted by these variables. Acculturation was not a significant predictor of parental acceptability. These results indicate that a large proportion of Latino parents are likely to accept the HPV vaccine and that certain Health Belief Model constructs may predict acceptability in this population. It is important for healthcare providers to understand what factors may predict Latino parents' acceptability to the HPV vaccine given the high rates of cervical cancer among Latina women. Recommendations for future research in this area are provided.

CHAPTER I: STATEMENT OF THE PROBLEM

Human Papilloma Virus (HPV) infection is the most common sexually transmitted disease (CDC, 2008). HPV infection is also one of the leading causes of both genital warts and cervical cancer. In the United States, HPV is known to cause 90% of genital warts and is responsible for 70% of cervical cancers (Reichman, 2008). According to the CDC (2008), 20 million Americans are currently infected with HPV and at least 50% of sexually active men and women will acquire the HPV infection. Not every individual who acquires HPV will develop genital warts or cervical cancer. In 90% of cases, the body's immune system clears the HPV infection naturally within two years (CDC, 2008). It is still unknown how the body can resist the HPV infection.

Today, HPV is one of the leading causes of cervical cancer. Specifically, HPV types 16, 18, 31, 33, and 45 are linked to cervical cancer. In the U.S., cervical cancer was once the leading cause of cancer deaths in women, but over the past 40 years, the mortality rate has decreased by 50% due to the implementation of Pap tests. Although cervical cancer rates have significantly dropped in the U.S., it continues to cause a large portion of cancer deaths in women. When compared by ethnicity, Latina women had the highest incidence rate of any race with a 13.2 per 100,000 rate of cervical cancer (Ward, 2004). In addition, higher prevalence rates of cervical cancer have also been found among immigrants (Ward, 2004).

In June of 2008, the United States Food and Drug Administration approved Merck's HPV vaccine, Gardasil, for females 9 to 26 years of age, for the purpose of reducing rates of HPV infection (FDA, 2008). Although research on parental acceptability towards the HPV vaccine began several years before the vaccine was approved, still little

is known on what influences parental acceptability towards the HPV vaccine. Overall, the research has supported that parents are accepting of the HPV vaccine and intend to have their daughters vaccinated against HPV.

Research has primarily focused on identifying the predictors to acceptability and intention to vaccinate. Mays, Sturm, & Zimet (2005) recruited 24 Caucasian and 10 African American parents and found that, when they compared urban clinic patients to suburban clinic patients, they found that urban clinic patients had less education and a higher HPV vaccine acceptance rate. This study did not find a significant difference between HPV vaccine acceptance and ethnicity. Another larger study that recruited 56% Caucasian, 40% African American and less than 2% Latino parents found that parents who did not have private insurance (66%) and were recruited from urban clinics (66%) were more likely to accept sexually transmitted infection (STI) vaccines (Zimet, et al., 2005). Olshen et al. (2005) who conducted a small nonrandom focus group concluded that higher rates of parental acceptability of the HPV vaccine depended on physician recommendation and if their child was at risk of infection. Other investigators have found that parental beliefs and attitudes, rather than knowledge, were stronger predictors of the HPV vaccine acceptability (Dempsey, Zimet, Davis, & Koutsky, 2006). Findings highlighted that those individuals with less education and less access to healthcare were more likely to accept the vaccine. These results may also generalize to the lower income Latino community.

Ogilvie et al. (2007) identified predictors to parental intention to vaccinate throughout Canada using random digit dialing and a telephone interview. The strongest predictors in this study included the parents' attitude towards vaccines in general, attitude

towards the HPV vaccine, recommendations from health care providers, family and friends, parents' ages, and if parents believed that the vaccine would negatively impact their daughters' sexual behavior. In a quantitative study, Constantine & Jerman (2007) found that Latino parents (84%) were more likely to accept the HPV vaccine for girls before age 13 than Caucasian, African American and Asian American parents. They also concluded that Asian Americans (60%) and African Americans (61%) were least likely to accept the HPV vaccine for girls before age 13. The parents who were more likely to accept the HPV vaccine had a high school degree or less. Those more likely to accept the HPV vaccine also identified as Catholic, less religious and politically liberal. These results may indicate that Latinos who identify themselves as less religious, Catholic and who are politically liberal are more likely to accept the HPV vaccine. Out of 75% of parents who endorsed the HPV vaccine, 40% attributed their acceptance to health and safety concerns and 25% of acceptances were because parents believed it was a practical prevention technique.

A study also found that women's willingness to have their children vaccinated was associated with whether their child had received all of the recommended vaccinations and if they accepted the vaccine for themselves (Slomovitz et al., 2006). Finally, research has also highlighted that parents who do not accept the HPV vaccine have concerns that it will promote sexual behaviors, promote unprotected sexual activity, and may cause adverse effects (Ogilvie et al., 2007).

While some studies focused on Latino parents or included Latino parents in their samples, most research has focused on other groups. Therefore knowledge about Latino parents' acceptability towards the HPV vaccine remains limited. The current study will

address Latino parents' acceptability towards the HPV vaccine for their daughters. This research intends to identify predictors to the acceptability towards the vaccine such as the perception of threat, perception of response effectiveness, cues to action, acculturation and access to healthcare.

CHAPTER II: REVIEW OF THE LITERATURE

Human Papillomavirus (HPV)

HPV is a virus, which causes a viral infection known to be associated with cervical cancer and genital warts. It is classified as a deoxyribonucleic acid (DNA) virus because it has the ability to replicate in genetic material such as a cell's nucleus (Wang & Kieff, 2008). HPV inhibits a protein that suppresses tumor growth and, as a result, promotes abnormal cell growth. HPV can be found on the skin as well as the body's internal skin walls known as mucus membranes. Mucus membranes can be found in the genitals, anus, mouth, and airways. HPV is transmitted through direct contact with the skin of an infected person. More than 40 HPV types are recognized to affect the genital area, and individual types are associated with their specific clinical manifestations (CDC, 2008)

HPV is transmitted through genital contact and usually is passed through vaginal, oral and anal sex (CDC, 2008). According to the Center for Disease Control (2008), 20 million Americans are currently infected with HPV and at least 50% of sexually active men and women will acquire the HPV infection. Some of the more common HPV types are categorized into either high or low risk categories, depending on their association with cervical cancer or genital warts (CDC, 2004). For example, HPV types 6 and 11 are considered low risk and can produce genital warts, whereas types 16, 18, 31, 33, and 45 are considered high risk and are linked to cervical cancer.

In the United States, HPV is known to cause 90% of genital warts and is responsible for 70% of cervical cancers (Reichman, 2008). The CDC (2008) estimated that 1% of sexually active adults in the U.S. will have genital warts at one time in their lives. Moreover, in 2008 the American Cancer Society estimated that during that year alone approximately, 12,200 women in the U.S. would be diagnosed with cervical cancer (CDC, 2010). Not every individual who acquires HPV will develop genital warts or cervical cancer. In 90% of cases, the body's immune system clears the HPV infection naturally within two years (CDC, 2008). It is still unknown how the body can resist the HPV infection. While much remains unclear about HPV infection, it is clear that HPV can present in many varieties including symptomless genital warts or be associated with a variety of benign tumors and malignant cancers (Reichman, 2008).

Consequences and Prevalence of HPV

Genital Warts

One of the presentations of genital HPV infection is genital warts. When HPV types 6 and 11 infect the genital areas, the virus inhibits tumor suppression. HPV then promotes uncontrolled cell growth that can lead to genital warts. Scheinfeld & Lehman (2006) estimated 70 % of individuals who have sexual contact with an infected partner will develop genital warts. HPV can be transmitted even if there is no visible genital wart (New York State Department of Health, 2004). It is estimated that 1% of adults who are sexually active will have genital warts (CDC, 2009). These warts may cause mechanical problems, such as obstruction of the birth canal or the urinary tract (Reichman, 2008). Additionally, the stigma associated with a STD can cause individuals high levels of stress. Therefore, in addition to physiological consequences, genital warts may also cause

psychological symptoms due to anxiety and depression over this condition (Reichman, 2008).

Cervical Cancer

Another manifestation of genital HPV infection is cervical cancer or less commonly, cancers in the penis, anus, vulva, or vagina (CDC, 2008). When HPV types 16, 18, 31, 33, and 45 infect the genitals they interfere with the P53 protein, which has several anti-cancer functions. This protein helps to regulate cell cycles, and prevents tumors from cycling into their duplication phase (Reichman, 2008). P53 can function to suspend the cell cycle, allowing repair of damaged proteins in abnormal cells. When HPV inhibits P53, the cells infected with the virus may enter the duplication cell cycle stage (or S phase) where the virally infected cells split. These infected cells can replicate, leading to an increased risk for cervical cancer.

According to the CDC, (2008) about 10% of women with high-risk HPV on their cervix will develop long-lasting HPV infections that put them at risk for cervical cancer. The presence of pre-cancerous cells in the uterine cervix can be asymptomatic and therefore require a Papanicolaou (Pap) test in order to detect the cell abnormalities. In a Pap test, a health care specialist scrapes the surface of the cervix in order to obtain a sample of cervical cells. The sample is then examined in order to detect the presence of pre-cancerous cells, also referred to as cervical intraepithelial neoplasia or cervical dysplasia.

Worldwide, cervical cancer is the third most common cancer diagnosed, and it remains the major gynecologic cancer in underdeveloped countries (Young, 2008). The high rates of cervical cancer may be attributable to the lack of resources such as sexual

education and medical access. Today, a large discrepancy still remains between the U.S. and worldwide cervical cancer rates. In 2007, it was expected that the United States would have 11,150 new cases of cervical cancer diagnosed, whereas worldwide 500,000 new cases were expected (WebMD, 2007). Although cervical cancer rates have significantly dropped in the U.S., it continues to cause a large portion of cancer deaths in women. In 2007, there were 3670 deaths from cervical cancer, and 85% of those patients had never had a Pap smear (Young, 2008).

Cervical Cancer & Minorities

In the U.S. during 1999-2007 the National Cancer Institute's (NCI) Surveillance, Epidemiology, and End Results (SEER) Program data estimated that in the U.S., the rate of cervical cancer found in women of all races was 10.6 per 100,000 (CDC, 2011). When compared by ethnicity, Latino women had the highest incidence rate of any race with a 14 per 100,000 rate of cervical cancer (CDC, 2011). The high Latino cervical cancer incidence rate may be linked to women who are not receiving a regular Pap test to screen for HPV. According to Ward et al. (2004), it was estimated that the percentage of women aged 18 and older who reported a Pap test in the three years prior to the study was 83.9% in non-Hispanic Whites and 85.5% in African Americans, but lower in Latinas (77.9%), American Indians/Alaskan Natives (78.4%), and Asians (68.2%), as well as recent immigrants (59.3%). However, these results are not significant when compared across groups and may better accounted for when examining access to healthcare. Overall, more resources are needed in order to reduce cervical cancer rates in minorities and it is also important to understand whether cultures respond differently to preventative medicine specific to women's health.

Cervical Cancer & Immigrants

Higher prevalence rates of cervical cancer have also been found among immigrants (Ward et al., 2004). In one study Guiliano, Papenfuss, Schneider, Nour, and Hatch, (1999) conducted a cross-sectional study of Mexican American women in Southern Arizona to determine risk factors for HPV infection. U.S. and Mexican born Mexican American women who were a minimum of 18 years of age were recruited from a county health clinic ($N = 998$). Participants completed a questionnaire in either English or Spanish depending on their language preference. The questionnaire included questions about their demographics, medical and sexual history. Information pertaining to the participant's clinical examination and HPV status was also collected. Using a backward step-wise logistic regression analysis they found that cervical cancer risk among Mexican American women was associated with younger age, single status, birth in Mexico, no oral contraceptive use, and increasing numbers of sexual partners. When compared to Mexicans who were born in the U.S., Mexicans who immigrated had higher percentages of being HPV positive even though their overall profile of HPV infection was considered low risk. The lower risk profile was based on age, education, tobacco use, number of sexual partners, use of oral contraceptives, history of STD infections, and condom use. The study attributed the elevated risk of women born in Mexico to either the behavior of the participants' male partners or an unmeasured sexual activity behavior pattern of the women. This study raised questions whether there is less communication among Latino sexual partners and past sexual activity or whether Latina women are less likely to report their sexual activity.

Cervical Cancer & Low SES

The higher prevalence rates of cervical cancer have also been attributed to lower socioeconomic status. According to Ward et al. (2004) socioeconomic factors such as poverty, inadequate education, and lack of health insurance appear to be far more influential than biological factors. Socioeconomic status can affect resources such as health education, prevention and treatment. Ward explained that income, education, and health insurance coverage can influence women's access to appropriate early detection screening, treatment, and palliative care. Data collected from 1995 to 1999, revealed that American Indian/Alaska native and Latina women in high poverty areas had almost twice the rate of cervical cancer mortality than their counterparts in low poverty areas (Ward et al., 2004). This analysis suggested that lower socioeconomic status contributes to the higher rates of cervical cancer death found in minorities. This research suggests that cost of the vaccine, as well as other expenses to accessing the vaccine can be a barrier towards preventative healthcare behavior.

HPV Prevention

HPV Vaccine

In June of 2008, the United States Food and Drug Administration approved Merck's HPV vaccine, Gardasil, for the purpose of reducing rates of HPV infection. Gardasil is indicated for males and females 9 to 26 years of age for prevention of the HPV types 6, 11, 16, and 18, (FDA, 2008). The vaccine is given in three doses, which should be administered within a 6-month period (Longo, 2007). The vaccine retails for \$125 per dose (\$375 for full series) and some major insurance companies cover the fee (CDC, 2008). According to the FDA (2008), the results from 21,000 women studied revealed that

Gardasil was nearly 100 percent effective in preventing precancerous cervical lesions, precancerous vaginal and vulva lesions, and genital warts caused by the HPV infection. Studies of women who were already infected with at least one type of HPV showed that the vaccine is only effective if it is given prior to infection; therefore the CDC recommends that vaccine administration occur before males and females becomes sexually active. Researchers found that most of Gardasil's adverse effects included mild or moderate pain reactions at the site of injection (FDA, 2006). In addition, in October of 2009, the FDA approved GlaxoSmithKline's cervical cancer vaccine Cervarix. This vaccine has been approved for females ages 9-25, protects against HPV strains 16 and 18 and found to be approximately 53% effective in preventing precancerous cervical lesions (FDA, 2009).

Prior to June of 2008, when the FDA approved Merck's HPV vaccine Gardasil, researchers studied HPV vaccine acceptability. The HPV vaccine is unique in that it is the only vaccine that protects against a STI and it is available to pre-adolescent males and females as young as age nine. Many researchers speculate that because the HPV vaccine protects against a STI and it's available to pre-adolescents, parental HPV vaccine resistance may be linked to fears that it will promote sexual activity or unsafe sexual practices. Researchers have also sought to find trends within HPV vaccine acceptance among parents by using different health behavior models. Many studies have also examined parental demographics, such as age, ethnicity, race, and religion to determine the likelihood of HPV vaccine acceptance.

Health Behavior Models

In healthcare behavior research, there are several health behavior models that have been used to explain participation in preventive medicine. Two common models used to predict healthcare behavior are the Health Belief Model and the Theory of Planned Behavior. To date, most of the research on parental acceptability towards the HPV vaccine has used the Health Belief Model. However, some studies have used the Theory of Planned Behavior to research parental intention to vaccinate their daughters against the HPV vaccine.

Health Belief Model

The Health Belief Model was developed by Rosenstock in the 1950's to explain why individuals are reluctant to participate in programs that screen and prevent disease (Stretcher & Rosenstock, 2007). The Health Belief Model assumes that health behaviors are influenced by the perceived threat or the likelihood of experiencing a health problem, the severity of the consequences of the health problem, and the perceived costs and benefits of the health behavior (Johnston & Johnston, 1998). Perceived threat is measured through perceived susceptibility and perceived severity. The response effectiveness is measured by comparing the costs and benefits the behavior will have on the illness (Conner & Norman, 1988). This model also includes cues to action, which is anything that may increase the behavior being evaluated. One limitation of this model that has been noted is that it does not measure variables such as attitudes and social norms that are associated with the behavior.

Perceived Threat & HPV Vaccine Acceptability

Several of the studies focusing on parental acceptability towards the HPV vaccine research have used components of the Health Belief Model. Two studies found that the more susceptible women thought their daughters were to acquire cervical cancer, the higher the acceptance towards the HPV vaccine (Olshen et al, 2005; Wu, Porch, McWeeney, Ohman-Strickland, Levine, 2010). However, the study conducted by Olshen et al, (2005) may not be generalizable to parental HPV vaccine acceptability because information was collected from a nonrandom focus group that consisted of 25 parents. Research suggests that women believe that cervical cancer is a severe disease and therefore a high perceived threat (Mays et al., 2004; Zimet et al., 2005; Dempsey et al., 2006). However, contrary to what would be predicted through the Health Belief Model, out of these three studies, only one found that perceived severity of cervical cancer was significantly associated with acceptability to an STI vaccine (Zimet et al., 2005). However, because Zimet et al., (2005) included HIV as an STI and queried about a hypothetical HIV vaccine, subjects may have been more willing to endorse acceptability of STI vaccines in general due to the high perceived severity of HIV.

Response Effectiveness & HPV Acceptability

The second component of the Health Belief Model is the perceived response effectiveness, which is measured by the perceived costs and perceived benefits towards the preventive health behavior. In each respective study, Dempsey et al., (2006), Bair, Mays, Strum & Zimet, (2010) and Yeganeh, Curtis & Kuo, (2010) found that when parents believed that the HPV vaccine was effective, they were more likely to accept the vaccines. Zimet (2005) found the effectiveness of the vaccine to be the most important

factor to parents. However, it is unclear if the parents were referring to the HPV vaccine or other STI vaccines included in this study.

Three studies found that one barrier reported by parents to vaccinating their daughters was the belief the vaccine would promote sexual activity (Constantine and Jerman, 2007; Mays et al., 2004; Zimet et al., 2005; Wu et al., 2010). However, the study conducted by Constantine & Jerman, (2007) did not provide a response rate to their recruitment telephone calls and response bias could have explained their study results. The study sample may have been unrepresented when compared to the population. A lower Mays et al., (2004) conducted a qualitative study that included 34 participants, which may not be a true representation of the population, whereas Zimet et al., (2005) conducted a study that consisted of 278 participants. Beliefs about vaccine safety (Dempsey et al., 2006; Constantine & Jerman, 2007; Yeganeh et al., 2010) and whether the vaccine would cause adverse effects (Dempsey et al., 2006; Slomovitz et al., 2006; Scarinci, I., C., Garces-Palacio, I., C., Partridge, E., E., 2007; Wu et al., 2010; Yeganeh et al., 2010), were also found to be perceived barriers.

Cues to Action

A third component that was added to the Health Belief Model is cues to action. Often times this component is defined as someone who directly promotes the health behavior (e.g., a physician, family member or friend). Dempsey et al. (2006), Olsen et al. (2005) and Yeganeh et al., (2010) found that a physician recommendation was associated with higher parental acceptability towards the HPV vaccine. These studies did not measure whether family or friend recommendations would impact HPV vaccine acceptability. In general, studies that have focused on components of the Health Belief

Model do not report any significant differences between the Latino parents and parents from other ethnicities.

Theory of Planned Behavior

The Theory of Planned Behavior model was developed by Ajzen (1985). This theory was expanded upon the Theory of Reasoned Action, and examines the intention of health behavior by evaluating attitudes towards the behavior, and whether social norms will influence the health behavior (Conner and Norman, 1988). The Theory of Planned Behavior social norm construct appears to overlap with the Health Belief Model's cues to action. The Theory of Planned Behavior extended on the Theory of Reasoned Action by suggesting that a person's perceived behavioral control or self-efficacy can also influence behavioral outcomes. Therefore, the Theory of Planned Behavior suggests that in order to measure behavioral intention, one must examine attitudes, social norms, and perceived behavioral control. One of the limitations of this model is that it does not account for the impact perceived risk can have on behavioral intention.

To date, only two studies have used the Theory of Planned Behavior to examine attitudes toward HPV vaccine. Ogilvie et al. (2007) conducted a telephone survey throughout Canada and examined parental acceptability of HPV vaccine. The researchers found that overall attitude toward vaccines and HPV vaccine, as well as the belief that someone the participant knew would get cervical cancer predicted parental intention to vaccinate their daughters against HPV. Physician, family, and friend recommendations also predicted intention to vaccinate daughters. They found that parents were less likely to vaccinate their daughters if they believed it would influence their children's future participation in sexual behavior. Another study found that mothers with a positive attitude

towards talking about sex and HPV showed an increased intention to vaccinate their daughters. Also mothers who were more willing to comply with physician, nurse, family, friend teacher and spiritual leader's recommendations and greater perceived behavior control were willing to talk to the daughter about sex when getting vaccinated against HPV (Askelson, Campo, Smith, Lowe, Dennis, Andsager, 2010). Although these two studies used the Theory of Planned Behavior, some the variables that were examined can also be seen as perceived costs and benefits associated with the Health Belief Model.

The studies that used the Health Belief Model found that perceived susceptibility and severity of HPV was associated with HPV vaccine acceptability. The perceived costs and benefits that were associated with HPV vaccine acceptability included the vaccine's efficacy, adverse effects, and whether it was thought to promote sexual behavior. The cues to action that predicted HPV vaccine acceptability were physician recommendation. The studies that used the Theory of Planned Behavior found that intention to vaccinate daughter was associated with attitudes and beliefs about vaccines as well as the HPV vaccine. The study also found that physicians, family, and friend's recommendations were associated with intention to vaccinate their daughters. Finally, similarly to the Health Belief Model, the Theory of Planned Behavior study also found that parents did not accept the HPV vaccine if they thought it promoted sexual behavior.

Acculturation

One way to examine how Latino culture impacts parents' views and behaviors is to study acculturation. Acculturation is a process whereby an individual adopts cultural traits of another culture. Acculturation includes social and psychological exchanges such as language, beliefs, attitudes, and socio-demographic information, such as place of birth or

number of years in their country of origin (Berry, 2003). Many researchers measure acculturation in their studies in order to identify trends within minority groups. Although acculturation is a popular measure for minority groups, controversy surrounds how it should be measured. Several people have criticized measures of acculturation because of inadequate conceptualization this construct, (Hunt, Schneider, and Comer, 2004).

One of the major debates about Latino acculturation measures is whether acculturation is unidimensional or bidimensional. Unidimensional measures look at acculturation on only one continuum. “The unidimensional assimilation model assumes that successful assimilation means that the immigrant must give up the original culture totally and adopt the host culture to a full extent and therefore biculturalism is only a temporary phase” (Beronius & Haraldsson, 2005, p. 7). A critique of the unidimensional assimilation model is that it does not account for the individuals who immerse themselves in two different cultures.

On the other hand, bidimensional measures of acculturation use two independent continuums, which include the adherence to culture of origin and the immersion into the dominant culture (Berry, 1997, 1998; Berry & Sam, 1996; Cuéllar et al., 1995; Marín & Gamba, 1996; Cabassa, 2003). By measuring two different continuums, it accounts for individuals who may have acculturated to a dominant culture and continue to participate in their culture of origin. However, one of the limitations of the bidimensional model is that it does not account for social patterns that may influence an individual’s adherence to culture of origin and the immersion into a dominant culture (Cabassa, 2003). For example, in the U.S., acculturation and social patterns can vary based on factors such as location, community influence and political climate.

In addition to the controversy that surrounds unidimensional and bidimensional acculturation measures, there are also a variety of ways acculturation can be measured. For example, many of the Latino acculturation measures have assessed language preferences and usage to determine how adaptation to a new culture occurs. Language is used because it affects a person's ability to communicate with their culture of origin as well as members from their culture of residence (Ugner, 2007). There are also many Latino acculturation measures that have expanded beyond language preference and examined cultural norms. Cultural norms are influenced from an individual's culture of origin, culture of residence, and self-identification (Cuellar et al., 1995; Orozco et al., 1993; Padilla, 1980; Unger, 2007). Finally, some investigators have taken a phenomenological perspective, which attempts to capture acculturation through a subjective perspective of an individual's experience. The phenomenological perspective veers away from models that suggest that acculturation is to be grouped by constructs such as language and norms. This perspective views each individual as having a unique experience and perspective of their acculturation.

Acculturation and Women's Health Behavior

Several researchers have examined whether acculturation influences healthcare behavior specific to women using a Health Belief Model. A majority of the research suggests that Latino acculturation has a positive effect on healthcare and perceptions of health (Lara et al., 2005). Increased levels of acculturation have been found to increase healthcare service utilization (Chesney et al., 1982). Harmon (1996) found that less acculturated Latino women were less likely than highly acculturated women to have cervical cancer screening and that least acculturated women had less cervical cancer

knowledge and more fear of cervical cancer death. Similar results were found in two studies that examined the frequency of Pap smears among Latina women. Both studies found that less acculturated Latina women were less likely to have had a Pap smear (Byrd, Peterson, Chavez, Heckert, 2004; Coronado et. al., 2004). Some studies have found no significant differences between Latino acculturation and healthcare practices such as Pap smear (Suarez, 1994), mammogram (Suarez, 1994) and breast self-examination (Zambrana, 1999).

In addition to breast and cervical cancer screening, a couple of studies have measured whether acculturation impacts immunization. These studies found that less acculturated women were more likely to have their children immunized (Anderson, Wood, Sherbourne, 1997; Prisilin, Suarez, Simpson, Dyer, 1998). The discrepancy found among these results may be a result of low-income Latinas having greater accessibility to child immunization than to cancer screenings.

Health Belief Model & Culture

Although the health belief models are applied cross-culturally, others have argued that, from a theoretical perspective, the health behavior models do not capture a multicultural perspective. Rajaram and Rashidi (1998) argued that these models measure individuals' decision making, as if they are not influenced by their community. The Health Belief Model includes cues to action rather than social norms as an influential factor for decision-making. In the Health Belief Model, cues to action is often defined as healthcare providers recommendation and one of the limitations is that it does not capture how other members of ones' community such as friends, family, spiritual leaders influence their behavior. They also state that the limitation of the health behavior models

is that it focuses on cognition rather than emotion, which also may explain help-seeking behavior in minority populations. Minorities' behavior may translate through feelings of discrimination or subordination while they are acculturating to a dominant culture. The Health Belief Model does not specifically examine community influence or social norms. One could argue however that these factors are embedded in one's perception. When considering a model that measures perception, such as the Health Belief Model, it would be challenging to understand how community influence and social norms impacts perception. Another limitation of the Health Belief Model is the focus on cognition. If one believes that cognitions and emotions influence each other, then it would be important to measure emotional responses.

HPV Vaccine & Latino Parents

While the prevalence rate of cervical cancer among Latina women in the U.S. remains the highest as compared to other ethnic groups, there is limited research on what impacts these health statistics. To date, there is also a limited amount of data that has measured U.S. Latino parental acceptability towards the HPV vaccine. None of the studies have found that there is a significant difference with Latino parental acceptability as compared to other ethnicities. One research study did find a relationship between acculturation and HPV prevalence. Kepka (2010) found that more acculturated Mexican Americans had a higher risk for HPV and other sexually transmitted infections. Additionally, factors such as perception of threat, perception of response effectiveness, cues to action and access to healthcare may play a role in HPV vaccine acceptability. These specific factors have not been examined when understanding Latino parents' acceptability towards the HPV vaccine.

Latino Parents & Adolescent Sexual Activity

One of the unique aspects of the HPV vaccine is that it is the first vaccine for a sexually transmitted infection. Therefore, many HPV vaccine parental acceptability research studies have measured whether parents are concerned that the HPV vaccine will promote sexual activity and unprotected sex (Mays, Sturm, Zimet, & 2004; Zimet et al., 2005; Constantine & Jerman, 2007; Wu, et al., 2010). There is no research that focuses solely on Hispanic parents and their attitude toward adolescent sexual activity. However, there is research that has focused on Hispanic parents communication about sexual issues with their adolescent children.

Research has suggested that in Latino families, communication about sex is more likely to occur with mothers than fathers, and more likely to happen with daughters rather than sons (Dilirio et al., 1999; Hutchinson & Cooney, 1998; Raffaelli et al., 1998; Raffaelli & Green, 2003). This research suggests that gender or cultural norms may play a role in sex communication within the Latino community. Research also has examined the topics related to sexual activity that Latino parents are more likely to discuss with their children. Miller, Kotchick, Dorsey, Forehand, & Ham (1998) found that Latino parents were significantly more likely to discuss STDs with their daughters compared to sexual behavior and contraceptives. There is limited research that focuses on Latino parents' sex communication with their children and no studies that focus on their attitudes towards sexual behavior among adolescents. Future research needs to closely examine these areas and consider how Latino culture and acculturation may impact Latino parents' views and behaviors. Traditional Latino parents may have more conservative views on sexual activity due to their religious beliefs, which may impact whether and how sex

communication occurs with their children as well as their perception and acceptability towards the HPV vaccine.

Conclusion

In the U.S., the Latino population is the largest growing minority group. Research in preventive healthcare is needed for this growing community. In 2005, the SEER program found that Latina women had the highest rate of cervical cancer in the U.S. Therefore research should focus on Latino parental acceptability toward the HPV vaccine. The HPV vaccine, although effective, has been the focus of significant controversy because of its unique qualities. It is the first vaccine to prevent a sexually transmitted infection and it can be administered to females as young as nine. Some parents have reported that they are fearful that this vaccine will have adverse effects and that it will promote sexual activity and unprotected sex. Another unique aspect of this vaccine is its administration method. The HPV vaccine is given in three shots over the course of 6 months. The HPV vaccine costs \$125 per shot, equaling \$375 in total for the vaccination. The administration schedule itself and cost can create barriers making it more difficult for parents to complete the administration schedule due to work, transportation barriers and the cost per dose. Future research needs to understand how these controversial issues and access to healthcare difficulties may impact Latino parents' acceptability rates.

To date, one parental acceptability study showed a significant difference between Latino and non-Latino parents. In studies where no differences have been found, methodological limitations (such as small sample sizes) may have contributed to the lack of findings. One parental acceptability study found that Latino parents who identified themselves as Catholic, less religious, and more liberal were more likely to accept the

HPV vaccine for girls younger than 13. The association between acculturation and HPV vaccine acceptability is limited and yet to be evaluated among Latino parents. There is little research that closely examines whether acculturation and access to healthcare influence parental acceptability towards the HPV vaccine. In order to understand Latino parental acceptability towards the HPV vaccine additional constructs such as acculturation, and access to healthcare may offer insight into future HPV public health initiatives.

The purpose of this study is to address HPV vaccine acceptability questions specific to the Latino community. In the U.S., the Latino community has the highest rate of cervical cancer (CDC, 2011). Therefore, it is crucial to specifically examine how Latino parents view the HPV vaccine and whether they intend to get their daughters vaccinated. The HPV vaccine has been approved since June 2006, yet to date there is minimal research that has examined HPV vaccine acceptability rates among Latino parents. According to Brewer (2007), additional behavioral research on populations that are most affected by cervical cancer, such as the Latino community needs to be conducted to understand HPV vaccine acceptability. This study examines potential predictors to Latino parents' acceptability towards the HPV vaccine for their daughters, using the Health Belief Model. These predictors include perception of threat, perception of response effectiveness, cues to action, acculturation and access to healthcare. The Latino community is the largest growing minority group and research in preventative healthcare for HPV is needed for this growing community. The following hypotheses were examined.

Hypotheses

Hypothesis 1A. Higher perception of susceptibility of HPV, cervical cancer, and genital warts will be associated with higher levels of parental acceptability towards the HPV vaccine for their daughters.

Hypothesis 1B. Higher perception of seriousness of HPV, cervical cancer, and genital warts will be associated with higher levels of parental acceptability towards the HPV vaccine for their daughters.

Hypothesis 2A. Lower perception of costs will be associated with higher levels of parental acceptability towards the HPV vaccine for their daughters.

Hypothesis 2B. Higher perception of benefits will be associated with higher levels of parental acceptability towards the HPV vaccine for their daughters.

Hypothesis 3. Cues to action (e.g., physician recommendation) will be associated with higher levels of parental acceptability towards the HPV vaccine for their daughters.

Hypothesis 4. Higher perceived effectiveness of the vaccine (against cervical cancer and genital warts) will correlate positively with parental acceptability towards the HPV vaccine for their daughters.

Hypothesis 5. Acculturation constructs (e.g. language competence, identity, behavior, psychological attachment) relate to parental acceptability to vaccinate daughters against HPV. Due to limited research in the literature, regarding the role of parental acceptability of the HPV vaccine and acculturation, no direction was determined for this hypothesis.

Hypothesis 6. Higher access to healthcare (insurance coverage) will be associated with higher levels of parental acceptability towards the HPV vaccine for their daughters.

Hypothesis 7. Taken together, demographic data, perception of threat, perception of response effectiveness, cues to action, perceived effectiveness, acculturation, and access to healthcare will significantly predict parental acceptability towards the HPV vaccine for their daughters.

CHAPTER III: METHOD

Participants

Participants ($N=130$) for this study included both male ($N=45$, 34.6%) and female ($N=85$, 65.4%) parents who identified themselves as Latino and had at least one daughter between the ages 9 and 17. The participants had to be 18 years or older and the mean age of the sample was 43 ($SD = 10.04$). The reported mean age of the participant's daughters was 12 ($SD = 2.98$). Participants reported the number of years they had lived in the U.S. ($M = 14$, $SD = 11.64$) years. Table 1 summarizes the place of origin for all participants.

Table 1

Place of Origin	<i>N</i>	%
Argentina	2	1.5
Chile	3	2.3
Columbia	30	23.1
Cuba	36	27.7
Dominican Republic	5	3.8
Ecuador	3	2.3
El Salvador	5	3.8
Guatemala	3	2.3
Honduras	1	0.8
Jamaica	1	1.5
Mexico	2	1.5
Nicaragua	2	1.5
Panama	1	0.8
Peru	4	3.1
Puerto Rico	2	1.5
Uruguay	2	1.5
USA	21	16.2
Venezuela	5	3.8
Incomplete	1	0.8

Parents were given an opportunity to complete the survey in their language of preference, which included Spanish ($N = 115$, 88.5%) and English ($N = 15$, 11.5%). The range of the participant's education included a) grade school ($N = 3$, 2.3%); b) some high school ($N = 12$, 9.2%); c) completed high school ($N = 27$, 20.8%); d) technical/vocational school ($N = 27$, 20.8%); e) some college ($N = 30$, 23.1%); and f) completed college ($n = 31$, 23.8%). Participants reported their household income which included the following ranges a) \$1,000-\$4,999 ($N = 21$, 16.5%); b) \$5,000-\$9,999 ($N = 6$, 4.7%); c) \$10,000-\$19,999 ($N = 13$, 10.2%); d) \$20,000-\$29,999 ($N = 38$, 29.9%); and e) \$30,000 or more ($N = 49$, 38.6%).

Measures

Participants completed the following: (a) survey that evaluates Latino parents' acceptability towards the HPV vaccine (b) The Language, Identity and Behavioral Acculturation Scale (LIB) (c) Psychological Acculturation scale (PAS).

Measure of Parents Acceptability towards the HPV Vaccine

This self-report questionnaire was a modified version of a survey that was developed by Fazekas, Brewer, & Smith, (2008). This survey assesses parental acceptability of the HPV vaccine, along with a series of questions that have been conceptualized by the Health Belief Model. The answers to the questions were rated on a 5-point Likert-type scale that ranged from strongly disagree to strongly agree, very unlikely to very likely, encourage a lot to discourage a lot, as well as nominal questions. The Health Belief Model assumes that health behaviors are influenced by the perceived threat of a health condition or likelihood of contracting the health condition, the severity of the health condition's consequences, and the perceived costs and benefits of the preventing the health conditions. Survey items are described below within the constructs of the Health Belief Model. The appendix includes a comprehensive list of how the items were coded by the Health Belief Model constructs.

Perceived Threat

Perceived Threat is defined by perceived susceptibility and seriousness. Two questions addressed these concepts. To assess susceptibility, participants were asked whether or not they thought their daughter had a chance of getting infected with HPV or cervical cancer. In order to evaluate seriousness, parents also rated whether they believed HPV infection and cervical cancer would be a serious health consequence.

Perceived Costs and Benefits

Perceived Costs and Benefits were measured by participants rating the cost and benefits of the HPV vaccine. Questions pertaining to these variables included whether the parents thought the HPV vaccine would promote sexual activity, be safe, be cost efficient, and prevent infection.

Perceived Effectiveness

The Perceived Effectiveness was measured by the parents rating whether they were confident that if they have their daughters receive the HPV vaccine, it would prevent HPV infection and cervical cancer.

Cues to Action

Another variable that was measured was cues to action. This concept is included in the Health Belief Model, with a parallel concept (that of subjective norms) being subsumed in the Theory of Planned Behavior as well. These questions addressed cues to action and asked how external stimuli can influence the participant's decision to vaccinate their daughter against HPV. Specifically, the external stimulus was a physician recommendation and reminder post card to get HPV vaccination for their daughter.

The original survey developed by Fazekas, Brewer, & Smith, (2008) also asked demographic questions such as age, race, marital status, education and health insurance. The current survey modified the demographic section to also include item related to ethnicity, country of origin, and household income. This survey also measured religious affiliation, attending religious services, and religious influence, and duration of time under their insurance carrier.

The original survey was not available in Spanish. For the purpose of this study, the instrument was translated to Spanish in order to give participants an opportunity to complete it in their language of preference. These measures were back translated and reviewed by the dissertation committee prior to administration. The psychometric data reported by Fazekas, Brewer, & Smith, (2008) included Cronbach's alpha for cues to action = .57, perceived barriers = .79. The validity of the cues to action related to intention to vaccinate was $r = .25$, and perceived barriers related to intention to vaccinate was $r = .32$. Thus, both related to intention to vaccinate.

Cronbach's alphas were calculated for this study and each of the health belief constructs and parental acceptability. These were as follows: Parental Acceptability = .778, Perceived Susceptibility = .612, Perceived Seriousness = .820, Perceived Costs = .020, Perceived Benefits = .459, Perceived Effectiveness = .658, Cues to action = .582.

Language, Identity and Behavioral Acculturation Scale (LIB)

The Language, Identity and Behavioral Acculturation Scale (LIB) assesses acculturation through three domains, which include language competence, identity, and behavioral acculturation. It was developed by Birman & Trickett (2001) and includes a total of 50 items. Ratings are made on 4-point Likert type scales. The language competence construct ranged from not at all to very well or like a native. The identity construct ranged from not at all to very much, and the behavioral construct ranged from not at all to very much. The scale yields a total score of each subscale by averaging the scores. The LIB assesses acculturation within the United States as well as the country of origin resulting in both U.S. culture and native culture subscales.

Psychological Acculturation Scale (PAS)

The Psychological Acculturation Scale (PAS) assesses the psychological components of acculturation. Troop, Erkut, Coll, Alarcon and Garcia (1999) developed the PAS, which measures an individual's psychological negotiation, emotional attachment to and understanding of two cultures. It consists of 10-items with a 9-point Likert-type scale that range from 1 (only Hispanic/Latino) to 9 (only Anglo/American). The scale yields one total score for psychological acculturation. The PAS Spanish and English version had a correlation of .94. In a study conducted with parents, the PAS internal consistency ranged from .53 to .79.

Procedures

Prior to recruiting, approval was obtained from Nova Southeastern University's Institutional Review Board. Participants were recruited from Hispanic Unity, a local non-profit organization that provides social and educational services to the Latino community. Participants were recruited from citizenship and English as a second language classes offered by the non-profit group. The participants were also recruited from community events, including a health fair sponsored by a local hospital. Participants were given an explanation of the purpose of the study. Participants who were interested in the study were asked whether they would prefer the study information in either English or Spanish. The participants were given the Institutional Review Board (IRB) approved consent forms in their language of preference before their participation began. A self-report questionnaire was administered to Latino parents. Upon completion, they received a \$10 Wal-Mart gift card. Administration time averaged approximately 15 minutes.

Statistical Analyses

Analyses progressed in a number of stages. First, the data were examined for significant outliers. Second, the data were evaluated to ascertain that assumptions for the statistical analyses were met. Third, the statistical analysis process was carried through descriptive statistics, correlations and a multiple regression. Descriptive statistics provided the means, standards deviations and ranges for the variables of interest. The assumptions of the t-test include independent samples, normal distribution, and homogeneity of variance. Levine's test was used to test for equal variances. The assumptions of the correlation and regression analyses include normal distributions and a linear relationship between the predictors. A series of Pearson's correlations and standardized coefficients were used to determine whether perceived threat (susceptibility and seriousness), perception of response effectiveness (perception of costs and benefits), cues to action, perceived effectiveness, access to healthcare, acculturation constructs (language competence, cultural identity, behavior, psychological attachment) were related to parental HPV vaccine acceptability for their daughters. An ANOVA was used to determine whether significant differences existed between insurance coverage and levels of parental acceptability towards the HPV vaccine. Finally, a multiple regression was conducted to determine the set of predictors that best predicts parental acceptability towards the HPV vaccine and beta coefficients were examined to evaluate the individual contributions.

CHAPTER IV: RESULTS

Preliminary Analyses

The data were examined for any significant outliers and none were found. For example, skewness values of +/-2 were used to indicate departures from normality and none were found. Relevant assumptions were also examined and deemed tenable. For example, Levene's test was used to assess homogeneity of variance (for analyses involving between-group contrasts). Results indicated that assumptions were not violated.

Descriptive Data

Table 2 summarizes the frequencies and percentages of the demographic data

Table 2

Descriptive Statistics for Frequency, Percentage for Demographic Data of the Survey

Demographic Data	<i>n</i>	%
Household Composite		
Single Parent/Guardian	37	28.5%
Two Parent/Guardians	58	44.6%
Parent(s)/Guardians(s) and Extended Family	35	26.9%
Household Income		
\$1,000-\$4,999	21	16.5%
\$5,000-\$9,999	6	4.7%
\$10,000-\$19,999	13	10.2%
\$20,000-\$29,999	38	29.9%
\$30,000 or more	49	38.6%
Religion		
Catholic	86	66.2%
Christian (non-denominational)	6	4.7%
Baptist	13	10.2%
Lutheran	2	1.5%
None	11	8.5%
Other	2	1.5%

Parental Acceptability

The primary outcome in the analyses to follow was parental acceptability.

Participants endorsed the following response options: a) very likely ($n = 58$, 44.6%); b) likely ($n = 33$, 25.4%); c) neither unlikely nor likely, ($n = 18$, 13.8%); d) unlikely ($n = 7$, 5.4%); e) very unlikely ($n = 13$, 10.0%).

Health Belief Model

Descriptive statistics for several constructs comprising the Health Belief Model can be found in Table 3.

Parental acceptability towards the HPV vaccine responses included a) very likely ($n = 58, 44.6\%$); b) likely ($n = 33, 25.4\%$); c) neither unlikely nor likely, ($n = 18, 13.8\%$); d) unlikely ($n = 7, 5.4\%$); e) very unlikely ($n = 13, 10.0\%$). As mentioned above, skew and kurtosis values indicated that the variables were generally normally distributed at the univariate level. The parental acceptability mean was between neither likely nor unlikely to vaccinate their daughter. The perception of susceptibility mean was between “no chance” to “low” and the perception of seriousness mean was between “low” to “moderate”. The mean for perception of cost ranged from “strongly disagree” and “discourage a little” to “neither agree nor disagree” and “no effect”. The perception of benefit mean was between “neither agree nor disagree” to “slightly agree”. Perception of effectiveness mean was between “slightly disagree” and “discourage a little” to “neither agree nor disagree” and “no effect”, where the cues to action mean was between “encourage a little” and “encourage a lot”. In general, the skew and kurtosis suggests that the data is less variable and evenly distributed.

Table 3

Descriptive Statistics for Mean, Standard Deviation, Ranges for Parental Acceptability and Health Belief Model Constructs of the Survey

Construct	<i>N</i> = 130	<i>M</i>	<i>SD</i>	Skew	Kurtosis	Range
Parental Acceptability		3.09	.74	-1.20	2.39	1-5
Perception of Susceptibility		1.80	.88	-.30	-.23	1-5
Perception of Seriousness		3.70	1.25	-1.28	1.31	1-5
Perception Costs		2.58	.58	.19	.17	1-5
Perception Benefits		3.15	.55	-.93	2.0	1-5
Perception Effectiveness		2.77	.75	.13	.06	1-5
Cues to Action		4.13	.78	-.70	.66	1-5

Note. Expected range for each of these constructs was 1-5

Table 4 provides descriptive for acculturation constructs of the survey. In general, the skew and kurtosis suggests that the data is less variable and evenly distributed.

Table 4

Descriptive Statistics for the Acculturation Measures of the Survey

Construct	<i>N</i> = 130	<i>M</i>	<i>SD</i>	Skew	Kurtosis	Range
U.S LIB		7.72	2.4	.27	-.87	1-5
Latin LIB		9.99	1.4	-1.03	1.25	1-5
PAS		3.90	1.7	.40	.11	1-10

Note. Expected range for each of LIB constructs 1-5, PAS constructs 1-10

Pearson correlations were examined between parental acceptability and the following variables: Age, Education, Religious Influence, Perception of Threat (Susceptibility & Seriousness), Response Effectiveness (Cost & Benefits), Cues to Action and Perceived Effectiveness. Pearson correlations were also executed between parental acceptability and the following acculturation variables: U.S Language, U.S. Identity, U.S. Behavior, Latin Language, Latin Identity, Latin Behavior and Psychological Attachment.

Table 5 summarizes correlations between parental acceptability and the predictor variables associated with the Health Belief Models construct of the surveys.

Table 5

Correlation Matrix for Interrelationships among Parental Acceptability, Health Belief Model, and Acculturation Variables

Characteristics	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Parental Accept	.												
2. Age	.23	.											
3. Education	.13	.03	.										
4. Religious Influence	.17	.04	-.11	.									
5. Susceptibility	.25	.09	-.04	.22	.								
6. Seriousness	.36	.09	.20	.16	.30	.							
7. Costs	.03	.16	.18	-.07	.03	.07	.						
8. Benefits	.60	.28	-.04	.09	.02	.06	-.17	.					
9. Cues to Action	.45	.18	.02	-.02	.07	.07	.34	.27	.				
10. Effectiveness	.37	.14	.21	-.01	.04	.19	.08	.24	.28	.			
11. U.S. LIB	-.08	-.11	.05	.05	-.06	.03	.13	-.14	-.14	.06	.		
12. Latin LIB	.05	-.01	-.06	-.04	.08	-.09	-.09	.11	.07	.10	-.46	.	
13. PAS	.06	.06	.12	-.02	.00	.09	.14	.06	.04	.10	.70	-.49	.

Elements above the main diagonal are not shown as they are redundant with corresponding elements below the main diagonal. Response options for variable numbers 2 through 10 were based on the following scale: strongly disagree to strongly agree, very unlikely to very likely, encourage a lot to discourage a lot, 1 (*strongly disagree*), 2 (*disagree*), 3 (*neither agree or disagree*) 4 (*agree*), 5 (*very unlikely*), 1 (*unlikely*), 2 (*disagree*), 3 (*neither unlikely or likely*) 4 (*likely*), 5 (*very likely*), 1 (*encourage a lot*), 2 (*encourage*), 3 (*no effect*) 4 (*discourage*), 5 (*discourage a lot*). Response options

for variable numbers 11 and 12 were based on the following scale: Not at All to Very well, like a native and Almost never to A lot of the time (frequently), 1 (*Not at All*), 2 (*Enough to get by*), 3 (*Pretty Well*), 4 (*Very well, like a native*) and 1 (*Almost never*), 2 (*Sometimes*), 3 (*A lot of the time (frequently)*), 4 (*Almost always or always*). Response options for variable number 13 were based on the following scale: Only with Hispanics/Latinos to Only with Anglos /Americans, 1 (*Only with Hispanics/Latinos*), 5 (*Equally with Hispanics/Latinos*), 10 (*Only with Anglos /Americans*).

The correlations above suggested that parental acceptability significantly correlated with parents' age, education, such that older and more educated parents were more accepting of the vaccine. Parents who reported that their religion influenced their life decisions, were more accepting of the vaccine. In addition, higher perceptions of susceptibility, seriousness, benefit and effectiveness were associated with more parental acceptability. Lower perception of costs and higher cues to action were associated with higher acceptance of the vaccine.

The Language, Identity and Behavior Acculturation Scale (LIB) were recoded to explore the relationship between U.S. and Latino acculturation constructs. The instrument yields two scores, one for U.S. acculturation and one for Latin acculturation. The instrument was recoded into six variables. The three U.S. variables included language competence, cultural identity, behavior and the three Latino variables language competence, cultural identity, behavior were analyzed. Pearson correlations revealed that the U.S. and Latino acculturation variables were not significantly correlated with parental acceptability. Table 6 summarizes these results.

Table 6

Correlation Matrix for Interrelationships among Parental Acceptability and Acculturation Variables

Characteristics	1	2	3	4	5	6	7	8
1. Parent Accept	.							
2. U.S. Language	-.12	.						
3. Latin Language	.04	-.21	.					
4. U.S. Identity	.02	.53	-.28	.				
5. Latin Identity	.03	-.14	.20	-.13	.			
6. U.S Behavior	-.12	.76	-.26	.69	-.14	.		
7. Latin Behavior	.04	-.46	.40	-.42	.31	-.56	.	
8. PAS	.07	.55	-.28	.60	-.28	.71	-.47	.

Elements above the main diagonal are not shown as they are redundant with corresponding elements below the main diagonal. Response options for variable numbers 1 through 7 were based on the following scale: Not at All to Very well, like a native and Almost never to A lot of the time (frequently), 1 (*Not at All*), 2 (*Enough to get by*), 3 (*Pretty Well*), 4 (*Very well, like a native*) and 1(*Almost never*), 2 (*Sometimes*), 3 (*A lot of the time (frequently)*), 4 (*Almost always or always*). Response options for variable number 8 were based on the following scale: Only with Hispanics/Latinos to Only with Anglos /Americans, 1 (*Only with Hispanics/Latinos*), 5 (*Equally with Hispanics/Latinos*), 10 (*Only with Anglos /Americans*).

The correlations above suggested that U.S. language significantly correlated with the U.S. identity and psychological acculturation. Such that the more parents preferred U.S. language and identified with the U.S., the more they are attached to being American. The parents, who reported a higher U.S. identity, had more U.S. behaviors and were attached to being American. In addition, higher U.S. behavior was associated with more American attachment. Finally, there was a negative association between U.S. behavior

and Latin behavior. The more the parents displayed U.S. behavior, the less they were to display Latin behavior.

To examine whether parent acceptability of the HPV vaccine varied significantly by level of insurance coverage, a one-way Analysis of Variance (ANOVA) was estimated in which 5 types of insurance coverage comprised the levels of the independent variable and parental acceptability was the dependent variable (see Table 7 for descriptives).

Table 7

Descriptive Statistics for Mean, Standard Deviation for Insurance Coverage of the Survey

Construct	N	M	SD
Construct	N = 130		
Medicaid	37	2.92	0.83
Private (HMO / PPO)	45	3.14	0.72
Other state / governmental	16	3.22	0.61
None / uninsured	17	3.13	0.89
Other	15	3.25	0.43

Results revealed no significant differences on parental acceptability among the five types of insurance, $F(4, 125) = .88, p = .48$.

Next, the hypotheses associated with the Health Belief Model were analyzed. The first hypothesis examined whether higher perception of susceptibility and seriousness of HPV, cervical cancer, and genital warts would be associated with higher levels of parental acceptability towards the HPV vaccine for their daughters. As hypothesized, higher levels of perceived susceptibility $r = .25, p = .02$ and seriousness $r = .34, p = .005$ were associated with higher levels of parent acceptability.

The third hypothesis examined whether higher perception of costs and lower perception of benefits of the HPV vaccine would be associated with higher levels of parental acceptability towards the HPV vaccine for their daughters. Perception of cost

was omitted from the model due to its low internal consistency. As hypothesized, higher levels of perceived benefits were associated with higher levels of parent acceptability, $r = .597, p = .001$. The fourth hypothesis examined whether higher perception of effectiveness of the vaccine (against cervical cancer and genital warts) would correlate positively with parental acceptability towards the HPV vaccine for their daughters. Higher perception of effectiveness did not correlate positively with parental acceptability towards the HPV vaccine for their daughters, $r = .37, p = .001$. The fifth hypothesis examined whether acculturation constructs (e.g. U.S. language competence, identity, and behavior (LIB); Latin language competence, identity, and behavior (LIB) and psychological attachment (PAS)) relate to parental acceptability to vaccinate daughters against HPV. Results indicated that none of the acculturation constructs were significant, U.S. LIB $r = -.08, p = .66$; Latin. LIB $r = .05, p = .72$; PAS $r = .07, p = .58$.

Hypotheses 1-6 were interested in predicting parent acceptability from several constructs relevant to the Health Belief Model and acculturation. Given the degrees of overlap among several of the predictors, a hierarchical regression model was estimated to examine the unique effects of each predictor on parent acceptability, while statistically controlling for all remaining predictors. As such, the final model was a multiple regression in which parental acceptability was regressed on the following predictors: a) U.S acculturation; b) Latin acculturation; c) Psychological acculturation; d) age; e) education; f) religious influence; g) perception of susceptibility; h) perception of seriousness; i) perception of benefits; j) perception of effectiveness; k) cues to action.

Results of the overall model can be found in Table 8. Three sets of predictors were entered sequentially using a hierarchical regression approach. The overall model was

significant, $F(12, 115) = 12.98, p < .001$. The first set of predictors, which included acculturation variables, was non-significant, $F(3, 124) = 1.68, p < .174, R^2 = .039$. The second set of predictors included the demographic variables that accounted for significant variability in parental acceptability, $F(3, 121) = 3.81, p < .01, R^2 = .12$. Age and religious influence were positively associated with parental acceptability. Education was not associated with parental acceptability. The third set of predictors included the Health Belief Model constructs variables, which also accounted for significant variability in parental acceptability, $F(5, 116) = 20.70, p < .000, R^2 = .575$. Perception of seriousness, perception of susceptibility, perception of benefits and cues to action were positively associated with parental acceptability. Perception of cost and effectiveness was not associated with parental acceptability. Examination of standardized beta coefficients, revealed that perception of susceptibility ($\beta = .15$), perception of seriousness ($\beta = .20$) perception of benefit ($\beta = .49$), and cues to action ($\beta = .29$) were the only significant predictors. Although age, education and religious influence were significant, the Health Belief Model constructs accounted for significant incremental variance in the final model.

Table 8

Construct	<i>N</i> = 130	Statistics			r_{sp}^2
		<i>R</i>	<i>B</i>	<i>p</i>	
U.S. LIB		-.082	.042	.655	.042
Latin LIB		.048	-.027	.718	-.034
PAS		.065	-.052	.580	-.052
<i>F</i> (3, 124) = 1.68, <i>p</i> = .174, R^2 = .039.					
Age		.227	-.002	.982	-.002
Education		.128	.100	.130	.141
Religious Influence		.165	.067	.295	.098
<i>F</i> (3, 121) = 3.81, <i>p</i> = .012, R^2 = .122.					
Perception of Susceptibility		.247	.154	.022	.212
Perception of Seriousness		.335	.192	.005	.257
Perception Benefits		.597	.486	.000	.537
Perception Effectiveness		.356	.108	.116	.146
Cues to Action		.453	.286	.000	.347
<i>F</i> (5, 116) = 20.70, <i>p</i> < .001, R^2 = .575.					

Note. *r* = zero-order correlation between predictor and outcome; *b* = unstandardized regression coefficient; *p* = significance of unstandardized regression coefficient from the full model; r_{sp}^2 = the square of the semi-partial correlation between the predictor and the outcome (from the full model).

Within the context of hypothesis 1-6, only hypotheses 1A (perception of susceptibility), 1B (perception of seriousness), 2B (perception of benefits) and 3 (cues to action) were supported. There was no support found for hypothesis 6 (acculturation).

CHAPTER V: DISCUSSION

Human Papilloma Virus (HPV) infection is the most common sexually transmitted disease and one of the leading causes of cervical cancer (CDC, 2008). When compared by ethnicity, Latina women in the U.S. have the highest incidence rate of any race with a 13.2 per 100,000 rate of cervical cancer (Ward, 2004). While some studies

focused on Latino parents or included Latino parents in their samples, most research has focused on other groups. Therefore knowledge about Latino parents' acceptability towards the HPV vaccine has remained limited. This study identified predictors of parental acceptability towards the HPV vaccine for their daughters in a sample of 130 Latino parents. The variables that were examined included demographics, perception of threat, perception of response effectiveness, cues to action and acculturation.

In healthcare behavior research, there are two common health behavior models that have been used to predict healthcare behaviors. To date, most of the research on parental acceptability towards the HPV vaccine has used the Health Belief Model. This model assumes that health behaviors are influenced by the perceived threat or the likelihood of experiencing a health problem, the severity of the consequences of the health problem, and the perceived costs and benefits of the health behavior (Johnston & Johnston, 1998). The health belief model measures the perceived effectiveness of the preventative behavior. Finally, cues to action are measured to examine whether external stimuli can impact preventative healthcare behavior.

The instrument utilized in the current study was a modified instrument originally developed using the Health Belief Model (Fazekas et al., 2008). This study found that 70% of parents were likely or very likely to vaccinate their daughters against the HPV vaccine. When comparing this study's results with other parental acceptability studies that did not use focus groups to obtain their sample or did not report parental acceptability rates were similar (Slomovitz et al., 2006; Ogilvie et al., 2007; Wu et al., 2010). When comparing results from this study with those from Fazekas et al., (2008)

both studies found that susceptibility and seriousness of the HPV infection, as well as the perceived effectiveness of HPV vaccine were associated with parental acceptability.

This study found that perceived susceptibility and seriousness of the HPV infection predicted parental acceptability of the HPV vaccine for their daughters. The results are consistent with other studies that examined an ethnically diverse sample of parent's perceived susceptibility (Olshen et al., 2005 and Wu et al., 2010) and seriousness (Mays et al., 2004; Zimet et al., 2005; Dempsey et al., 2006). These results suggest that parents who intended to accept the vaccine were more aware of the serious consequences of HPV. Although this study did not measure knowledge, many studies (Dempsey et al., 2006; Olshen et al., 2005; Wu et al., 2010; Perkins et al., 2010) found that knowledge alone does not relate to parental acceptability for the HPV vaccine. These results suggest that parents who are knowledgeable about the seriousness of HPV may have actively sought out healthcare information. It is likely that parents who seek out healthcare information and communicate more with their healthcare providers are more likely to take an active approach in preventative healthcare treatments.

Parents who do not believe their daughters are susceptible to HPV are likely to be unaware of the high prevalence rates of HPV infection. It is also possible that they do not believe that their daughters are susceptible because they may not believe that their daughters are sexually active. The parents who do not believe in the seriousness of HPV infection may not believe in the consequences of HPV infection or have not discussed these consequences with their healthcare provider. Resistance to acknowledging the prevalence and seriousness of HPV may be linked to parents' fear surrounding infection and disease. In addition, the HPV vaccine is the first vaccine for a sexually transmitted

infection and it is unclear whether an emotional response to this vaccine is impacting parental acceptability. Overall, it is suspected that there may be different subgroups of parents that have different ways of obtaining healthcare information that may impact their behavior as well as their own personal barriers to understanding the threat of HPV.

Parental acceptability of the HPV vaccine was also related to the perception of benefits and cues to action. Similar to other studies (Constantine & Jerman, 2007; Dempsey et al., 2006; Wu et al., 2010), parents who believed the vaccine was safe were more likely to vaccinate their daughters. The importance of safety for HPV vaccine acceptability may be due to the current media exposure surrounding immunization safety for children. When analyzing the impact of cues to action on HPV vaccine acceptability, results were consistent with other studies (Dempsey et al., 2006; Olshen et al., 2005; Yeganeh et al., 2010) that suggested that physician recommendation impacted HPV vaccine acceptability. These results suggest that it is important for physicians as well as other health care providers to communicate with parents about the prevalence of HPV, HPV health risks, benefits of the HPV vaccine, and recommend their daughters to get vaccinated. Again, although knowledge has not been found to impact parental acceptability, it appears that the information source influences parent's decisions.

The study results were inconsistent with other studies that found perceived cost were predictors of HPV acceptability. Several studies (Constantine and Jerman, 2007; Mays et al., 2004; Zimet et al., 2005; Wu et al., 2010) found that parents were less likely to accept the HPV vaccine if they believed it had serious side effects. Other studies (Mays et al., 2004; Olshen et al., 2005; Zimet et al., 2005; Wu et al., 2010) also found that parents believed that the HPV vaccine would promote sexual activity. This

suggests that attitudes may have shifted from previous ideas about the relationship between the vaccine and sexual activity. Now that the vaccine has been approved for several years, parents may be overlooking the impacts they believe the vaccine will have on their daughter's current sexual behavior and consider the vaccine's future health prevention benefits. However, the lack of relationship between cost and parental acceptability in this study may be a result of the low internal consistency exhibited by this variable.

The results did not support any relationship between HPV vaccine acceptability and acculturation. Acculturation was one of the main variables examined. A variety of acculturation constructs were measured in this study, which included language, behavior, identity, and psychological acculturation. When compared to other studies that measured acculturation as a predictor to health care behavior, this study's acculturation measures were more extensive. Considering the extensive measures used for this study, these results suggest that acculturation is either not a variable that predicts HPV vaccine acceptability or it is a variable that has to be measured qualitatively through an individual's unique perspective. It is also unclear if and how acculturation influences perception on healthcare decisions. The Health Belief Model used to conceptualize this study, does not include acculturation as a factor that impacts health care decisions. Therefore, it is unclear where it might fit within health perceptions.

Although acculturation was not a significant predictor of HPV vaccine acceptability among parents, this research can speak to the social patterns of a small subgroup of the Latino community in South Florida. It is important that future research capture Latino social patterns throughout the U.S., as they can vary depending on

location, community influence and political climate. It also suggests that the discrepancy among the rates of cervical cancer between Caucasians and Latino may be the responsibility of the health care system, rather than the Latino community.

Finally, results indicated that there was no significant difference between type of insurance coverage that parents reported and level of acceptability reported by parents. Although a majority of parents had insurance coverage for their daughters ($n = 98$, 75.4%), they can continue to have barriers to accessing healthcare. For example, co-pay fees, occupational constraints and transportation difficulties may not lend for access of healthcare. These however were not directly evaluated in the study.

Strengths and Limitations of the Study

Overall, this study had several strengths and limitations. This study examined HPV vaccine acceptability among Latino parents, a population that has been underrepresented in parental acceptability of the HPV vaccine literature. One of the largest studies (Kepka, 2010) that examined Latino parents collected a sample of mostly Mexican Americans. One of the strengths of this study is the diverse sample of the Latino population, including parents who were from Caribbean, Central American and South American countries. It is unclear how the other parental acceptability studies compare in diversity, because most of the studies reported their research participants as either Hispanic or Latino without reporting place of origin. This was the first study to recruit a sample of Latino parents in South Florida and examine their acceptability toward the HPV vaccine for their daughters. These results speak to the social patterns of this geographical region and the community's health behaviors and can be compared to other parental acceptability studies throughout the U.S. Another strength of this study was that

it was conceptualized using the Health Belief Model, which is a theoretical model widely accepted in health behavior research. In addition to using the health belief model, this study used several measures and constructs to associate with acculturation.

Among the limitations of this study the validity of the survey needs to be addressed. The validity of this measure was not completed prior to study recruitment and therefore it is unclear whether this measure accurately measures parental acceptability towards the HPV vaccine. Cues to action should have been further explored since Latino culture is family and community oriented. Cues to action should have extended beyond physician recommendation and examined whether family, friend and spiritual leader recommendations influence HPV vaccine acceptability among parents. This study also did not capture the full range of the sample's socioeconomic status. The household income variable capped at \$30,000 or more and over a third ($n = 49$, 38.6%) of the participants fell into this range, therefore there is no certainty to how many of the participant's household income ranged far above \$30,000. Participants were recruited from a non-profit organization that provides services for low-income Latinos in South Florida. These services included citizenship and English as a second language classes. The participants were also recruited from community events, including a health fair sponsored by a local hospital. Although the sample is diverse, it may not be a true representation of the Latino population. In addition, it is difficult to predict whether these results translate into the parents actually getting their daughters vaccinated against HPV. Finally, after this study was developed, the CDC recommended the HPV vaccine for boys. Therefore, one of the limitations of this research study is that it did not examine parental acceptability of the HPV vaccine for their sons.

Suggestions for Future Research

This study suggests that future research needs to examine whether parents who are both knowledgeable about HPV and actively seek out their healthcare information are more likely to accept the HPV vaccine for their daughters. Results showed that perception of the threat of HPV had an impact on HPV vaccine acceptability. These perceptions are likely to evolve throughout time and be shaped by personal experiences and personality. Future studies should examine how these personal factors shape parents' perceptions of the HPV vaccine. It also is recommended that research focus on understanding the role and influence of the parent's healthcare providers; specifically, the relationship between patients and their healthcare providers, the patient's past healthcare experiences and how much time the patient spends with their healthcare providers. Given that cultural background and insurance coverage did not appear to pose as a barrier towards vaccine acceptance, the explanatory factor for this epidemic in the Latino community may be the disparity of access to healthcare among minorities beyond insurance coverage (e.g. co-pay, occupational constraints, and transportation).

Although acculturation was not a significant predictor of HPV vaccine acceptability among parents, this research can speak to the social patterns of a small subgroup of the Latino community in South Florida. It is important that future research capture Latino social patterns. Latinos tend to behave under collectivism rather than individualism philosophy. Also, each family has a hierarchal family structure that can be determined by gender and generation. Future research needs to understand how Latino family structure and interdependent dynamics influence their acceptability towards the

HPV vaccine for their daughters. In addition, future research should identify how Latino families are influenced in their communities. Finally, future research should address some of the limitations of this study, such as including a diverse sample in socioeconomic status, collecting data in multiple locations, and using established validated measures.

Currently, Latina women have the highest rate of cervical cancer in the U.S, and future research must understand this health disparity within the Latino community. This research suggested that Latino parents' perception of the threat and safety of the HPV vaccine impacts their acceptability towards the HPV vaccine for their daughters. Parental acceptability is also influenced by their healthcare providers' recommendations. HPV is the first vaccine to prevent a sexually transmitted infection and future research needs to examine parents' emotional response to this unique preventative healthcare measure. Many of the findings were consistent with the research on parental acceptability. In order to understand the high prevalence rates of cervical cancer among Latina women, we need to understand barriers to healthcare access beyond insurance coverage, the relationship parents have with their daughter's healthcare providers and personal barriers that prevent parents from understanding the threat of HPV infection.

In addition to the future research recommendations, public health initiatives need focus on interventions that help change parent's perceptions both within the healthcare system, as well as outside the health care system. For example, programs to help increase awareness of the seriousness and susceptibility of HPV and the benefits of the HPV vaccine at spiritual gatherings, community events, schools and children's extra circular

activities. Overall, it is recommended that HPV vaccine acceptability programs target Latino parents throughout their community.

Implications

The implications of this study suggest that many Latino parents accept the HPV vaccine for their daughters. In addition, their level of acculturation to the U.S. does not predict their acceptability towards the HPV vaccine. Therefore, the CDC needs to address the high prevalence of HPV in this community. Health prevention initiatives need to reach this community through their healthcare providers, educators, spiritual leaders, and community leaders. Healthcare prevention may include additional locations of HPV vaccine administration, such as churches, community centers, and schools. Financial subsidies may encourage Latino parents to have their daughter's vaccinated. Finally, media coverage directed to the Latino community can also serve as a way to communicate resources regarding information and administration locations of the HPV vaccine.

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APPENDIX A: Instruments

Participant ID#: _____

Date: ____/____/____
MM/DD/YY

1. What is your gender? 1 Male 2 Female
2. Year of Birth 19 _____
3. What country were you born in? _____, if you were born in the U.S skip to question 5.
4. How long have you lived in the U.S.? _____yrs
5. How would you describe your racial or ethnic background?
 - 1 Cuban
 - 2 Dominican
 - 3 Puerto Rican
 - 4 Central American
 - 5 South American
 - 6 Other: _____
6. What is the highest level of education you have completed?
 - 1 Grade school
 - 2 Some high school
 - 3 Completed high school
 - 4 Technical/ Vocational school
 - 5 Some college
 - 6 Complete university degree/college diploma
7. How would you describe your household composition?
 - 1 Single parent/guardian
 - 2 Two parent/guardian
 - 3 Parent(s)/guardians and extended family
8. Please indicate your Household Income:
 - 1 1,000 - 4,999
 - 2 5,000 - 9,999
 - 3 10,000 -19,999
 - 4 20,000 -29,999
 - 5 30,000 or more
9. What is your zip code? _____
10. How would you describe your religious or spiritual background, or affiliation, if any?
 - 1 Catholic
 - 2 Presbyterian
 - 3 Christian (Non-denominational)
 - 4 Baptist
 - 5 Methodist
 - 6 Lutheran
 - 7 None
 - 8 Other, please specify: _____

11. How often do you attend religious services in the past year?
- 1 At least once a week
 - 2 At least twice a month
 - 3 A few times a year
 - 4 At least once a year
 - 5 Never
12. How much do you agree with the following statement?
My religious or spiritual belief system guides my daily decisions
- 1 Strongly Agree
 - 2 Agree
 - 3 Not sure
 - 4 Disagree
 - 5 Strongly Disagree
13. How many children under 18 currently live in your household? _____
14. What is the age of *your* daughter(s) who are between the ages 9 and 17?
- _____ yrs
 - _____ yrs
 - _____ yrs
 - _____ yrs

Please answer these questions with your oldest daughter between ages 9-17 in mind

15. Has daughter received any or all of the recommended, routine infant or childhood vaccinations?
- 1 Yes, all of them
 - 2 Yes, some of them
 - 3 No, none of them
 - 4 Unsure
16. What type of insurance coverage, if any, does your daughter have?
- 1 Medicaid
 - 2 Private (HMO, PPO)
 - 3 Other state or government insurance program
 - 4 None or Uninsured
 - 5 Other: _____
17. How long has your daughter been covered under her current insurance _____year(s) _____month(s)
18. What age should females first go to the Gynecologist? _____ years old
19. Has your daughter been to the Gynecologist ?
- 1 If YES, How old was your daughter when she first went to the Gynecologist? _____ years old
 - 2 NO
 - 3 NOT SURE

20. Have you spoken to your oldest daughter between the ages of 9-17 about the following?

- | | | |
|---|--------------------------------|-------------------------------|
| 1 <input type="checkbox"/> Menstruation | 1 <input type="checkbox"/> yes | 2 <input type="checkbox"/> no |
| 2 <input type="checkbox"/> Sexual Practices (i.e. sexual intercourse, oral sex, anal sex, touching) | 1 <input type="checkbox"/> yes | 2 <input type="checkbox"/> no |
| 3 <input type="checkbox"/> Safe Sex | 1 <input type="checkbox"/> yes | 2 <input type="checkbox"/> no |
| 4 <input type="checkbox"/> Sexually Transmitted Diseases | 1 <input type="checkbox"/> yes | 2 <input type="checkbox"/> no |
| 5 <input type="checkbox"/> Pregnancy | 1 <input type="checkbox"/> yes | 2 <input type="checkbox"/> no |

21. Have you ever heard of HPV (humanpapilloma virus)?

- No Yes Don't know

In case you have not heard of HPV, it is a sexually transmitted infection. Some common types of HPV lead to cervical cancer or genital warts. HPV is not the same as HIV, the virus that leads to AIDS.

There is a new vaccine that prevents HPV infection. 7 out of 10 cervical cancer cases can be prevented if people use this vaccine.

22. Have you heard of the HPV vaccine before today?

- No Yes Don't know

23. How effective do you think the HPV vaccine is in preventing **HPV infection**?

- Not at all Slightly Moderately Very Extremely

24. How effective do you think the HPV vaccine is in preventing **cervical cancer**?

- Not at all Slightly Moderately Very Extremely

25. What would be the best age to give a person the HPV vaccine?

- 0-2
 3-10
 11-16
 17-25
 25+

Please tell us how much you agree or disagree with the following statements.

	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree
26. The HPV vaccine may have serious side effects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. The HPV vaccine is safe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. The vaccine will prevent children from getting HPV.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. The HPV vaccine can prevent cervical cancer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. The vaccine can cure HPV infection.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. If an adolescent girl received the HPV vaccine, she may be more likely to have sex.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Adolescent girls should be vaccinated against HPV.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Adolescent boys should be vaccinated against HPV.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

34. What is the chance that your adolescent daughter will get **cervical cancer** in the future?

- No chance Low Moderate High Certain

35. If she had **cervical cancer**, how serious a threat to her health would it be?

- No threat Very low Low Moderate High Very high

36. What is the chance that your adolescent daughter will be infected with **HPV** in her lifetime?

- No chance Low Moderate High Certain

37. If your adolescent daughter were infected with **HPV**, how serious a threat to her health would it be?

- No threat Very low Low Moderate High Very high

38. How likely would you be to vaccinate your adolescent daughter against HPV?

- Very unlikely Unlikely Neither unlikely nor likely Likely Very likely

The **HPV vaccine requires three shots.**

39. How likely would you be to get your adolescent daughter vaccinated if you had to return **2 months** later for the second shot?

- Very unlikely Unlikely Neither unlikely nor likely Likely Very likely

40. How likely would you be to get your adolescent daughter vaccinated, if you had to return **6 months** later for the third shot?

- Very unlikely Unlikely Neither unlikely nor likely Likely Very likely

41. How likely would you be to vaccinate your adolescent daughter against HPV if it prevented **cervical cancer**? Assume the vaccine is free.

- Very unlikely Unlikely Neither unlikely nor likely Likely Very likely

42. How likely would you be to vaccinate your adolescent daughter against HPV if it prevented **genital warts**? Assume the vaccine is free.

- Very unlikely Unlikely Neither unlikely nor likely Likely Very likely

43. What is the most you would pay out of pocket to get your adolescent daughter vaccinated against HPV? This is from your own money, not paid by insurance.

- Nothing
 \$1-19
 \$20-49
 \$50-99
 \$100-199
 \$200-299
 \$300-399
 \$400 or more

How much would the following discourage or encourage you to get your adolescent daughter vaccinated against HPV?

	Discourage a lot	Discourage a little	No Effect	Encourage a little	Encourage a lot
44. Doctor's recommendation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. Receiving a reminder (postcard, call)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. Ease of getting to the place offering the vaccination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. Low cost of the vaccine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. Free or paid for by insurance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. Highly effective in preventing HPV infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. Vaccine has side effects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. Others (please specify) _____					

How much do you agree with the following statements as they relate to your health decisions?

52. What will be will be?

1. Strongly Agree
2. Agree
3. Not Sure
4. Disagree
5. Strongly

53. It's in God's hands?

1. Strongly Agree
2. Agree
3. Not Sure
4. Disagree
5. Strongly

54. This illness is a test of God?

1. Strongly Agree
2. Agree
3. Not Sure
4. Disagree
5. Strongly

1. You have to die of something?

2. Strongly Agree
3. Agree
4. Not Sure
5. Disagree
6. Strongly

Participant ID#: _____

Date: ____/____/____
MM/DD/YY

55. ¿Cuál es tu género? 1 femenino 2 masculino
56. Año de nacimiento 19____ ____
57. ¿En que país nació? _____ (Si nació en los Estados Unidos, por favor seguir a la pregunta #5).
58. ¿Por cuanto tiempo ha vivido en los Estados Unidos? _____ años
59. ¿Cómo describiría su origen racial o étnico?
- 1 Cubano/a 2 Dominicano/a 3 Puertorriqueño/a 4 Centro Americano/a
5 Sur Americano/a
- 6 Otro: _____
60. ¿Cuál es el nivel más alto de educación que ha completado?
- 1 Escuela primaria
2 Algo de escuela secundaria
3 Complete la escuela secundaria
4 Algo de Universidad
5 Escuela de formación profesional técnica
6 Completé la universidad/diploma universitario
61. ¿Cómo describiría los miembros de su hogar?
- 1 Un padre/protector 2 Dos padres/protectores 3 Padre(s)/protector(es) y familia
ampliada
62. Indique los ingresos del hogar:
- 1 1,000 - 4,999 2 5,000 - 9,999 3 10,000 -19,999 4 20,000 -29,999
5 30,000 or más
63. ¿Cuál es su código postal?? _____
64. ¿Cómo describiría su formación religiosa o espiritual?
- 1 Católico
2 Presbiteriano
3 Cristianos (no denominación)
4 Bautista
5 Metodista
6 Luterano
7 Ninguna
8 Otro, por favor explicar: _____

65. ¿Con qué frecuencia asistió usted a servicios religiosos en el último año?
- 1 Por lo menos una vez por semana
 - 2 Por lo menos dos veces al mes
 - 3 Varias veces en el año
 - 4 Por lo menos una vez en el año
 - 5 Nunca
66. ¿Cuánto está de acuerdo con la siguiente declaración? Mis creencias religiosas o espirituales guían mis decisiones diarias.
- 1 Totalmente de acuerdo
 - 2 De acuerdo
 - 3 No estoy seguro/a
 - 4 En desacuerdo
 - 5 Totalmente en desacuerdo
67. ¿Cuántos hijos menores de 18 viven en su hogar? _____
68. ¿Cuáles son las edades de sus hijas de entre 9 y 17 años?
- _____ años
 - _____ años
 - _____ años
 - _____ años

Por favor conteste las siguientes preguntas pensando en su hija mayor entre las edades 9 y 17.

69. ¿Su hija ha recibido algunas o todas las vacunas de infancia o visitas medicas recomendadas?
- 1 Si, todas
 - 2 Si, algunas
 - 3 No, ninguna
 - 4 No estoy segura
70. ¿Que tipo de seguro tiene su hija?
- 1 Medicaid
 - 2 Privado (HMO, PPO)
 - 3 Otro programa del estado o gobierno
 - 4 Ninguno
 - 5 Otro: _____
71. ¿Cuánto tiempo lleva su hija bajo el seguro actual? _____ años _____ meses
72. ¿A que edad deben de ir las mujeres al ginecólogo? _____ años
73. ¿Su hija ha visitado un ginecólogo?
- 1 Si sí, ¿a que edad fue su primera visita? _____ años
 - 2 No
 - 3 No estoy segura

74. ¿Ha hablado con su hija mayor de entre 9 y 17 años de lo siguiente?
- 1 Menstruación
 - 2 Prácticas sexuales (relaciones sexuales, sexo oral, sexo anal, tocar)
 - 3 Sexo seguro
 - 4 Enfermedades de transmisión sexual
 - 5 Embarazo
75. ¿Ha usted oído de HPV (Virus del papiloma humano)?
- 1 No
 - 2 Si
 - 3 No se

Si usted no sabe del HPV, es una infección de transmisión sexual. Algunos tipos comunes de HPV causan cancer cervical o verrugas genitales. HPV no es igual que el VIH, el virus que cause el Sida. Existe una nueva vacuna que previene la infección del HPV. 7 de 10 casos de cancer cervical pueden prevenirse con esta vacuna.

76. ¿Ha usted oído de la vacuna del HPV antes de hoy?
- 1 No
 - 2 Si
 - 3 No se
77. ¿Que tan efectiva cree usted que es la vacuna del HPV en prevenir el cancer cervical?
- 1 De ninguna manera
 - 2 Un poco
 - 3 Moderadamente
 - 4 Mucho
 - 5 Extremadamente
78. ¿Cuál sería la mejor edad para darle a una persona la vacuna del HPV?
- 1 0 - 2
 - 2 3 – 10
 - 3 11 – 16
 - 4 17 – 25
 - 5 25 o más

Por favor diganos cuanto esta de acuerdo o en desacuerdo con las siguientes declaraciones.

	Totalmente de acuerdo	De acuerdo	No estoy seguro/a	En desacuerdo	Totalmente en desacuerdo
79. La vacuna del HPV puede tener serios efectos secundarios.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
80. La vacuna del HPV es segura.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
81. La vacuna previene que los niños cojan el HPV.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
82. La vacuna del HPV puede prevenir el cancer cervical.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
83. La vacuna puede curar la infección del HPV.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
84. Si una niña adolescente recibe la vacuna del HPV, es más probable que tengo relaciones sexuales.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
85. Las niñas adolescents deben de vacunarse contra el HPV.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
86. Los niños adolescents deben de vacunarse contra el HPV.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

87. ¿Cuál es la probabilidad de que su hija adolescente tundra cancer cervical en el futuro?

- 1 No Chance
- 2 Bajo
- 3 Moderado
- 4 Alto
- 5 Cierto

88. ¿Si tuviera cancer cervical, cual fuera la gravedad de amenaza hacia su salud?

- 1 Ningun riesgo
- 2 Bien bajo
- 3 Bajo
- 4 Moderado
- 5 Alto
- 6 Bien alto

89. ¿Cuál es la probabilidad de que su hija sea infectada con HPV en toda su vida?

- 1 No Chance
- 2 Bajo
- 3 Moderado
- 4 Alto
- 5 Cierto

90. ¿Si su hija fuese infectada con HPV, cual fuera la gravedad de amenaza hacia su salud?

- 1 Ningun riesgo
- 2 Bien bajo
- 3 Bajo
- 4 Moderado
- 5 Alto
- 6 Bien alto

91. ¿Cuál es la probabilidad de que usted vacune a su hija adolescente contro el HPV?

- 1 Muy poco probable
- 2 Poco probable
- 3 Ni poco probable ni probable
- 4 Probable
- 5 Muy probable

	Muy poco probable	Poco probable	Ni poco probable ni probable	Probable	Muy probable
92. ¿Cuál es la probabilidad de que usted vacune a su hija adolescente si tiene que volver <u>2 meses</u> mas tarde para recibir la segunda inyeccion?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
93. ¿Cuál es la probabilidad de que usted vacune a su hija adolescente si tiene que volver <u>6 meses</u> mas tarde para recibir la tercera inyeccion?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
94. ¿Cuál es la probabilidad de que usted vacune a su hija adolescente contra el HPV si previene el <u>cancer cervical</u> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
95. ¿Cuál es la probabilidad de que usted vacune a su hija adolescente contra el HPV si previene el <u>verrugos genitales</u> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

La vacuna contra el HPV requiere tres inyecciones.

¿Cuál es la mayor cantidad que usted pagaría para vacunar a su hija adolescente? Esto es de su propio

	Desanimaría mucho	Desanimaría un puncho	Ningun efector	Animaría un poco	Animaría mucho
96. Recomendaciones del doctor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
97. Recibir un aviso (llamada, carta)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
98. Facilidad de llegar al lugar donde ofrecen la vacuna	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
99. Bajo costo de la vacuna	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
100. Gratis o pagado por el seguro	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
101. Muy efectivo en prevenir la infección del HPV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
102. La vacuna tiene efectos secundarios	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
103. Otras (por favor explicar): _____					

dinero y no cubrido por los seguros.

- | | | | |
|--|--|--|--|
| 1 <input type="checkbox"/> Nada | 2 <input type="checkbox"/> \$1 - \$19 | 3 <input type="checkbox"/> \$20 - \$49 | 4 <input type="checkbox"/> \$50 - \$99 |
| 5 <input type="checkbox"/> \$100 - \$199 | 6 <input type="checkbox"/> \$200 - \$299 | 7 <input type="checkbox"/> \$300 - \$399 | 8 <input type="checkbox"/> \$400 o más |

¿Cuanto desanimaría o animaría las siguientes recomendaciones en su decision de vacunar a su hija adolescente contra el HPV?

	Totalmente de acuerdo	De acuerdo	No estoy seguro/a	En desacuerdo	Totalmente en desacuerdo
104. <i>Que será, sera</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
105. <i>Que sea lo que Dios quiera</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
106. <i>Esta enfermedad es una prueba de Dios</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
107. <i>De algo se tiene que morir uno</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Psychological Acculturation Scale – English Version
(Tropp, Erkut, Garcia Coll, Alarcon, & Vazquez-Garcia, 1999)**

1. With which group of people do you feel you **share most of your beliefs and values** ?

1-----2-----3-----4-----5-----6-----7-----8-----9
Only with Equally with Only with
Hispanics/Latinos Hispanics/Latinos Anglos (Americans)

2. With which group of people do you feel you **have the most in common**?

1-----2-----3-----4-----5-----6-----7-----8-----9
Only with Equally with Only with
Hispanics/Latinos Hispanics/Latinos Anglos (Americans)

3. With which group of people do you **feel most comfortable**?

1-----2-----3-----4-----5-----6-----7-----8-----9
Only with Equally with Only with
Hispanics/Latinos Hispanics/Latinos Anglos (Americans)

4. In your opinion, which group of people **best understands your ideas** (your way of thinking)?

1-----2-----3-----4-----5-----6-----7-----8-----9
Only with Equally with Only with
Hispanics/Latinos Hispanics/Latinos Anglos (Americans)

5. Which culture do you **feel proud to be a part of**?

1-----2-----3-----4-----5-----6-----7-----8-----9
Only with Equally with Only with
Hispanics/Latinos Hispanics/Latinos Anglos (Americans)

6. In what culture do you know **how things are done** and **feel that you can do them easily**?

1-----2-----3-----4-----5-----6-----7-----8-----9
Only with Equally with Only with
Hispanics/Latinos Hispanics/Latinos Anglos (Americans)

7. In what culture do you **feel confident you know how to act**?

1-----2-----3-----4-----5-----6-----7-----8-----9
Only with Equally with Only with
Hispanics/Latinos Hispanics/Latinos Anglos (Americans)

8. In your opinion, which group of people **do you understand best**?

1-----2-----3-----4-----5-----6-----7-----8-----9
Only with Equally with Only with
Hispanics/Latinos Hispanics/Latinos Anglos (Americans)

9. In what culture do you know **what is expected of a person in various situations**?

1-----2-----3-----4-----5-----6-----7-----8-----9
Only with Equally with Only with
Hispanics/Latinos Hispanics/Latinos Anglos (Americans)

10. Which culture do you **know the most about** (for example: its history, traditions, and customs)?

1-----2-----3-----4-----5-----6-----7-----8-----9
Only with Equally with Only with
Hispanics/Latinos Hispanics/Latinos Anglos (Americans)

**Psychological Acculturation Scale – Spanish Version
(Tropp, Erkut, García Coll, Alarcon, & Vásquez-García, 1999)**

1. ¿Con qué grupo de personas siente que comparte la mayoría de sus **creencias y valores**?

1-----2-----3-----4-----5-----6-----7-----8-----9		1-----2-----3-----4-----5-----6-----7-----8-----9
Sólo con Hispanos/Latinos	Con Hispanos/ Latinos y Anglos (Americanos) ambos por igual	Sólo con Anglos (Americanos)

2. ¿Con qué grupo de personas siente que **tiene lo más en común**?

1-----2-----3-----4-----5-----6-----7-----8-----9		1-----2-----3-----4-----5-----6-----7-----8-----9
Sólo con Hispanos/Latinos	Con Hispanos/ Latinos y Anglos (Americanos) ambos por igual	Sólo con Anglos (Americanos)

3. ¿Con qué grupo de personas se siente más **cómodo(a)**?

1-----2-----3-----4-----5-----6-----7-----8-----9		1-----2-----3-----4-----5-----6-----7-----8-----9
Sólo con Hispanos/Latinos	Con Hispanos/ Latinos y Anglos (Americanos) ambos por igual	Sólo con Anglos (Americanos)

4. En su opinión, ¿qué grupo de personas **mejor entiende sus ideas** (su forma de pensar)?

1-----2-----3-----4-----5-----6-----7-----8-----9		1-----2-----3-----4-----5-----6-----7-----8-----9
Sólo con Hispanos/Latinos	Con Hispanos/ Latinos y Anglos (Americanos) ambos por igual	Sólo con Anglos (Americanos)

5. ¿De qué cultura se siente **orgulloso(a)** de ser miembro?

1-----2-----3-----4-----5-----6-----7-----8-----9		1-----2-----3-----4-----5-----6-----7-----8-----9
Sólo la cultura Hispana/Latina	La Cultura cultura Hispana/ Latina y la Anglo (Americana) ambos por igual	Sólo la cultura Anglo (Americana)

6. ¿En qué cultura sabe cómo hacen las cosas y siente que **puede hacerlas con facilidad**?

1-----2-----3-----4-----5-----6-----7-----8-----9
 Sólo la cultura Hispana/Latina La Cultura cultura Hispana/ Latina y la Anglo (Americana) ambos por igual Sólo la cultura Anglo (Americana)

7. ¿En qué cultura se siente seguro(a) de que **sabe cómo comportarse**?

1-----2-----3-----4-----5-----6-----7-----8-----9
 Sólo la cultura Hispana/Latina La Cultura cultura Hispana/ Latina y la Anglo (Americana) ambos por igual Sólo la cultura Anglo (Americana)

8. En su opinión, ¿a qué grupo de personas **entiende mejor**?

1-----2-----3-----4-----5-----6-----7-----8-----9
 Sólo la cultura Hispana/Latina La Cultura cultura Hispana/ Latina y la Anglo (Americana) ambos por igual Sólo la cultura Anglo (Americana)

9. ¿En qué cultura sabe **lo que se espera** de una persona en varias situaciones?

1-----2-----3-----4-----5-----6-----7-----8-----9
 Sólo la cultura Hispana/Latina La Cultura cultura Hispana/ Latina y la Anglo (Americana) ambos por igual Sólo la cultura Anglo (Americana)

10. ¿De qué cultura **conoce más** (por ejemplo: su historia, sus tradiciones, y sus costumbres)?

1-----2-----3-----4-----5-----6-----7-----8-----9
 Sólo la cultura Hispana/Latina La Cultura cultura Hispana/ Latina y la Anglo (Americana) ambos por igual Sólo la cultura Anglo (Americana)

For the following statements, please mark one of the four possible answers.

1 2 3 4

Language

How would you rate your ability to speak **English**:

1. at school or work?	Not at all	Enough to get by	Pretty well	Very well, like a native
2. with American friends?	Not at all	Enough to get by	Pretty well	Very well, like a native
3. on the phone?	Not at all	Enough to get by	Pretty well	Very well, like a native
4. with strangers?	Not at all	Enough to get by	Pretty well	Very well, like a native
5. overall?	Not at all	Enough to get by	Pretty well	Very well, like a native

How well do you understand **English**:

6. on TV or at the movies?	Not at all	Enough to get by	Pretty well	Very well, like a native
7. in newspapers or in magazines?	Not at all	Enough to get by	Pretty well	Very well, like a native
8. in songs?	Not at all	Enough to get by	Pretty well	Very well, like a native
9. overall?				

How would you rate your ability to speak **Spanish**:

10. with family?	Not at all	Enough to get by	Pretty well	Very well, like a native
11. with Hispanic friends?	Not at all	Enough to get by	Pretty well	Very well, like a native

	1	2	3	4
12. on the phone?	Not at all	Enough to get by	Pretty well	Very well, like a native
13. with strangers?	Not at all	Enough to get by	Pretty well	Very well, like a native
14. overall?	Not at all	Enough to get by	Pretty well	Very well, like a native

How well do you understand **Spanish**:

15. on TV or at the movies?	Not at all	Enough to get by	Pretty well	Very well, like a native
16. in newspapers or in magazines?	Not at all	Enough to get by	Pretty well	Very well, like a native
17. in songs?	Not at all	Enough to get by	Pretty well	Very well, like a native
18. overall?	Not at all	Enough to get by	Pretty well	Very well, like a native

	1	2	3	4
20. I think of myself as being American .	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
21. I feel good about being American .	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always

How would you describe your cultural/ethnic identity? _____

In the following questions we would like to know the extent to which you consider yourself American and Hispanic. To what extent are the following statements true of you?

	1	2	3	4
22. Being American plays an important part of my life.	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
23. I feel that I am part of American culture.	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
24. If someone criticizes Americans , I feel they are criticizing me.	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
25. I have a strong sense of being American .	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
26. I am proud of being American .	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
27. I think of myself as being Hispanic .	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
28. I feel good about being Hispanic .	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
29. Being Hispanic plays an important part in my life.	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
30. I feel that I am part of Hispanic culture.	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
31. If someone criticizes Hispanics , I feel they are criticizing me.	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
32. I have a strong sense of being Hispanic .	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always

33. I am proud that I am **Hispanic**.

Almost never
or never

Sometimes

A lot of the time
(frequently)

Almost always
or always

To what extent are the following statements true about the things that you do?

How much do you speak **English**:

1

2

3

4

1. at home?

Almost never or never

Sometimes

A lot of the time (frequently)

Almost always or always

2. with your neighbors?

Almost never or never

Sometimes

A lot of the time (frequently)

Almost always or always

3. with friends?

Almost never or never

Sometimes

A lot of the time (frequently)

Almost always or always

4. at work or at school?

Almost never or never

Sometimes

A lot of the time (frequently)

Almost always or always

How much do you:

5. read **American** books, newspapers, or magazines?

Almost never or never

Sometimes

A lot of the time (frequently)

Almost always or always

6. eat at **American** restaurants?

Almost never or never

Sometimes

A lot of the time (frequently)

Almost always or always

7. watch **American** movies on VCR/ DVD or in movie theaters?

Almost never or never

Sometimes

A lot of the time (frequently)

Almost always or always

8. eat **American** food?

Almost never or never

Sometimes

A lot of the time (frequently)

Almost always or always

9. attend **American** concerts, exhibits, etc?

Almost never or never

Sometimes

A lot of the time (frequently)

Almost always or always

10. buy groceries in **American** stores?

Almost never or never

Sometimes

A lot of the time (frequently)

Almost always or always

11. go to **English** speaking doctors?

Almost never or never

Sometimes

A lot of the time (frequently)

Almost always or always

12. socialize with **American** friends?

Almost never or never

Sometimes

A lot of the time (frequently)

Almost always or always

How much do you speak Spanish :	1	2	3	4
1. at home?	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
2. with neighbors?	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
3. with friends?	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
4. at work or school?	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
How much do you:	1	2	3	4
5. read Spanish books, newspapers, or magazines?	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
6. eat at Hispanic restaurants?	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
7. watch Spanish movies on VCR/ DVD or in movie theaters?	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
8. eat Hispanic food?	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
9. attend Spanish concerts, exhibits, etc?	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
10. buy groceries in Hispanic stores?	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
11. go to Spanish speaking doctors?	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always
12. socialize with Hispanic friends?	Almost never or never	Sometimes	A lot of the time (frequently)	Almost always or always

Sobre las frases siguientes, por favor marque una de las cuatro respuestas que más le corresponda a usted.

Lenguaje	1	2	3	4
¿Cómo calificaría usted su habilidad para hablar inglés :				
1. en la escuela o el trabajo?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
2. con amigos Americanos?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
3. en el teléfono?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
4. con desconocidos?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
5. en general?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
¿Qué tan bien entiende usted inglés :				
6. en la televisión o en una película?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
7. en el periódico o en una revista?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
8. en canciones?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
9. en general?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo

	1	2	3	4
¿Cómo calificaría usted su habilidad para hablar español :				
10. con su familia?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
11. con amigos Hispanos ?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
12. en el teléfono?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
13. con desconocidos?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
14. en general?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
¿Qué tan bien entiende usted español :				
15. en la televisión o en una película?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
16. en el periódico o en una revista?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
17. en canciones?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
18. en general?	Para nada	Me defiendo	Bastante bien	Muy bien, como un nativo
19. ¿Cómo describiría usted su identidad cultural/étnica? _____				

En las siguientes preguntas nos gustaría saber la magnitud con la que usted se considera Americano/a y Hispano/a. ¿Con qué magnitud siente usted que las siguientes frases son verdaderas acerca de usted?

	1	2	3	4
20. Yo me considero Americano/a .	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
21. Me siento bien acerca de ser Americano/a .	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
22. Ser Americano/a es una parte importante de mi vida.	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
23. Yo siento que yo soy parte de la cultura Americana .	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
24. Si alguien critica a los Americanos , yo siento que me están criticando a mí.	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
25. Tengo un fuerte sentido de ser Americano/a .	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
26. Me siento orgulloso de ser Americano/a .	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
27. Yo me considero Hispano/a .	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
28. Me siento bien acerca de ser Hispano/a .	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
29. Ser Hispano/a es una parte importante de mi vida.	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre

	1	2	3	4
30. Yo siento que yo soy parte de la cultura Hispana .	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
31. Si alguien critica a los Hispanos , yo siento que me están criticando a mí.	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
32. Tengo un fuerte sentido de ser Hispano/a .	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
33. Me siento orgulloso de ser Hispano/a .	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre

¿En qué medida son verdaderas las siguientes frases sobre las cosas que usted hace?

¿Cuánto habla usted inglés :	1	2	3	4
1. en casa?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
2. con vecinos?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
3. con amigos?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
4. en el trabajo o la escuela?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
¿Cuánto usted:				
5. lee libros, periódicos, o revistas Americanas ?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
6. come en restaurantes Americanos ?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
7. mira películas Americanas en VCR/DVD o en el cine?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre

	1	2	3	4
8. come comida Americana ?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
9. asiste conciertos o shows Americanos ?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
10. compra mercado en tiendas Americanas ?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
11. va a médicos que hablan inglés ?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
12. socializa con amigos Americanos ?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
<i>¿Cuánto habla usted español:</i>				
1. en casa?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
2. con vecinos?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
3. con amigos?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
4. en el trabajo o la escuela?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
<i>¿Cuánto usted:</i>				
5. lee libros, periódicos, o revistas Hispanas ?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
6. come en restaurantes Hispanos ?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
7. mira películas Hispanas en VCR/DVD o en el cine?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
8. come comida Hispana ?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
9. asiste conciertos o shows Hispanos ?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
10. compra mercado en tiendas Hispanas ?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
11. va a médicos que hablan español ?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre
12. socializa con amigos Hispanos ?	Casi nunca o nunca	Algunas veces	Gran parte del tiempo (frecuentemente)	Casi siempre o siempre

APPENDIX B: Coding Categories

Health Belief Model –Variable Codes

THREAT

Perception of Susceptibility

34 (chance cervical cancer)

36 (chance infected with HPV)

Perception of seriousness of HPV, cervical cancer, genital warts

35 (cervical cancer serious)

37 (HPV serious)

RESPONSE EFFECTIVENESS (cost/ benefit)

Perception of cost

26 (serious side effects)

31 (more likely to have sex)

43 (cost)

50 (side effects)

Perception of benefits

27 (safe),

28 (prevent children HPV)

29 (prevent cervical cancer)

30 (cure HPV infection)

Cues To Action

44 (Dr's recc),

45 (reminder call)

EFFICACY

Perceived effectiveness of vaccine

- 23 (effective HPV infection)
- 24 (effective cervical cancer)
- 49 (effective HPV infection)

ACCEPT

- 32 (Adol Girl should be vaccinated against HPV)
- 33 (Adol Boy should be vaccinated against HPV)
- 38 (Likely to vaccinate)
- 39 (Likely to vaccinate if 2nd shot in 2 months)
- 40 (Likely to vaccinate if 3rd shot in 6 months)
- 41 (Likely to vaccinate if prevents CC and free)
- 42 (Likely to vaccinate if prevents warts and free)

Access to health

- 16 (Insurance Coverage)
- 17 (Time under coverage)

MISC

- 47: Low cost
- 48: Free
- 51: Other

