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Formative Research on HPV Vaccine Acceptability Among Latina Farmworkers

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Abstract

The purpose of this study was to identify the barriers and benefits to human papillomavirus (HPV) vaccination in a low-income, Latina farmworker population in central Florida. This study reports on formative qualitative research conducted on perceptions of benefits, barriers, costs, place, and promotion related to the HPV vaccine from surveys and interviews with a sample of 46 low-income, Latina farm workers and 19 health care workers serving this population. It was found that Latina farmworkers hold many misperceptions about the HPV vaccine and the potential links between HPV infection and cervical cancer. In addition, it was observed that HPV vaccination intention was inversely related to concerns about adolescent sexual behavior and low perceived risk of infection but might be positively influenced by belief in illness prevention and physician recommendation. These findings add to the growing research on HPV vaccine acceptability among Latina subgroups to inform intervention development, marketing materials, education, and policy.

Keywords

cervical cancer; cancer prevention and control; health disparities; Latino; minority health; immunization

Since Latinos represent the largest racial/ethnic minority group in the United States, efforts to improve cancer outcomes for this group will have a significant public health impact. Latino migrant and seasonal farmworkers, the population subgroup under study, are a vulnerable population at risk for cancer. Epidemiologic evidence suggests that, compared with the general population, this group—which is primarily young, foreign-born, and undocumented—is at increased risk for specific types of cancer such as lymphoma, leukemia, and cervical cancer, because of elevated and repeated exposures to toxic fumes, sunlight, pesticides, and fertilizers (Mills, Dodge, & Yang, 2009). They have an elevated risk for late-stage diagnosis because of poor access to health care services, lack of regular health care providers, language barriers, and perceived discrimination. These barriers combined with dangerous workplace risk factors make them vulnerable in terms of poor cancer outcomes (Meade, Calvo, & Rivera, 2002; Quandt et al., 2004).

BACKGROUND

Cervical Cancer Risk Factors

The biomedical model of cervical cancer attributes disease causation to infection with high-risk human papillomavirus (HPV) genotypes, specifically subtypes 16 and 18, which are

linked to approximately 70% of cervical cancer cases (American Cancer Society, 2009). Primary cervical cancer risk factors include persistent infection with oncogenic HPV subtypes, multiple sexual partners, early age of sexual onset, and smoking. HPV is transmitted by skin-to-skin contact, yet condoms for prophylaxis provide only partial protection for viral transmission (Nielson et al., 2010). A population-based study using the National Health and Nutrition Examination Survey 2003–2004 data found that the seroprevalences of HPV-16 and HPV-18 were lower for Mexican American women versus Blacks and Whites. However, the analysis did not adjust for time in the United States, so the findings cannot be generalized to all populations with Mexican backgrounds (Markowitz, Sternberg, Dunne, McQuillan, & Unger, 2009). In contrast to the biomedical model of cervical cancer, qualitative research has identified other cervical cancer risk factors to comprise the lay explanatory model for Latina women such as family history, feminine hygiene practices, reproductive decisions (e.g., abortion, use of birth control pills), and physical or emotional trauma (Chavez, McMullin, Mishra, & Hubbell, 2001). Misperceptions about the causes of cervical cancer and lack of awareness of HPV affect the likelihood of HPV vaccine adherence in Latino populations (Vanslyke et al., 2008).

HPV Vaccine Acceptability

While the data are mixed on HPV vaccine acceptability across various racial and ethnic populations, some studies report that vaccine acceptability is generally high among Latinas, yet some have concerns about the vaccine's safety and risk of encouraging an earlier age of sexual activity (Sanderson et al., 2009; Staras, Vadaparampil, Haderxhanaj, & Shenkman, 2010). The Advisory Committee on Immunization Practices guidelines recommend that vaccination with the quadrivalent vaccine (HPV4; one of two Food and Drug Administration–approved HPV vaccines on the market) be routinely administered to girls aged 11 or 12 years old, with catch-up vaccinations administered between the ages of 13 and 26 years old (Markowitz et al., 2007). The most recent National Immunization Survey (NIS-Teen) found that HPV4 coverage of more than one dose for Latina teens between 13 and 17 years old was slightly higher than among White teens (44% vs. 35%), yet these coverage rates still represent low levels (Centers for Disease Control and Prevention, 2009).

A recent systematic review of HPV vaccine acceptability studies found that very few studies had Latina research participants, or women from rural areas, low-income, and low-education categories (Allen et al., 2010). Some differences have been found regarding acceptance of the HPV vaccine among Latino subgroups and depending on HPV status (Bair, Mays, Sturm, & Zimet, 2008; Watts et al., 2009). Wu, Porch, McWeeney, Ohman-Strickland, and Levine (2010) found that 50% of Latina mothers living in New Jersey worried about safety, specifically the adverse effects of the vaccine for their daughters. HPV status has been shown to affect Latina women's acceptance of the vaccine, with HPV-positive mothers more likely be aware of and favor vaccination for their daughters (Sanderson et al., 2009).

Conceptual Framework

We employed a social marketing conceptual framework to understand how health innovations (Rogers, 1995), in this case the HPV vaccine, might reach potential adopters from hard-to-reach populations. Social marketers conduct formative research with target audiences to assess knowledge, attitudes, perceptions and beliefs to inform the design of their communication materials (Kotler & Lee, 2008; McKenzie-Mohr & Smith, 1999). Formative research is necessary to try to understand the target audience's reasons for adopting a new behavior (Andreasen, 1995). Formative research is the precursor to audience segmentation and developing social marketing plans and strategies for influencing target audience behaviors (Quinn, Ellery, Thomas, & Marshall, 2010). The HPV vaccine was marketed as an anticancer vaccine, emphasizing that everyone was at equal risk for cervical

cancer, while minimizing the sexual transmissibility of HPV, and subgroups most at-risk were ignored in these marketing efforts (Rothman & Rothman, 2009). The competition to HPV vaccination, that is, “not getting the vaccine,” might be a more attractive choice for groups confronted with vaccine access barriers. The HPV vaccine requires three doses, at specific time intervals of between 1 to 2 months and 6 months after the first dose; studies have shown completion results below 50% for the three-dose regimen (Chao, Velicer, Slezak, & Jacobsen, 2009).

Study Purpose

The study purpose was to identify the barriers and benefits to HPV vaccination in a low-income, Latina farmworker population to inform future social marketing efforts. To accomplish this, we explored HPV vaccine acceptability among Latina farmworkers—from primarily Mexican and Honduran backgrounds—complemented by qualitative data gathered from health care workers serving this population.

METHOD

The study employed a sequential, explanatory mixed methods research design (QUAN → qual); this article focuses on the qualitative findings to help explain the quantitative results (Creswell, 2009). The description of the survey development and quantitative results have been reported elsewhere (Luque et al., 2010). The qualitative data were gathered from key informant interviews with health care providers and triad interviews with community participants, as well as the open-ended questions on the aforementioned surveys. Triad interviews resemble small focus groups; however, participants might know one another and delve more into personal decision-making issues (Matthews, Adamek, & Dunkle, 1993). The University of South Florida Institutional Review Board approved the study procedures.

Participant Characteristics

Study participants ranged in age from 19 to 60 years and most self-identified as Latina. Participants' socio-demographic characteristics are listed in Table 1. Participants had a mean age of 34 years, 8 years of schooling, 11 years living in the United States, and a median weekly income of \$275. Triad interview participants included one Guatemalan and five Mexican participants, ranging in age from 24 to 50 years. Health care worker participants from the Federally Qualified Health Center (FQHC) mostly self-identified as Latina (16 out of 17), and their occupational categories included medical assistant, nurse, outreach worker, office staff, and physician assistant. Key informant interviews were completed with two trusted local health care provider contacts.

Participant Recruitment and Data Collection

First, we recruited a purposeful sample of 40 farmworker women from two clinics to participate in a structured, interviewer-administered, patient survey. Participant inclusion criteria were as follows: age (18–55 years), cancer history (no previous diagnosis of cervical cancer), and ethnicity (Mexican or Honduran). We recruited 17 health care workers in the FQHC by word-of-mouth. For the follow-up qualitative study, we conducted key informant interviews with two health care providers, one from the weekly outreach clinic and one from the local county health department, and two independent triad interviews with a convenience sample of Latina farmworkers recruited from the outreach clinic.

The triad interview and key informant interview structure interview guides were developed concurrently. The key informant interview guide asked questions such as “What kind of outreach do you think is necessary to positively increase Pap test adherence? What about access to the HPV vaccine?” Key informant interviews lasted approximately 1 hour. The

triad interviews contained questions related to cervical cancer, HPV, and the HPV vaccine to explore barriers and benefits. Triad interviews were administered by a trained bilingual interviewer during two consecutive weeks in a classroom adjacent to the clinic and lasted approximately 45 minutes each.

Study participants received a Spanish-language educational brochure developed for the study about cervical cancer screening and the HPV vaccine, along with a list of resources to access free or low-cost services. Participants received a \$20 stipend for their participation.

Data Analysis

Two independent reviewers analyzed the open-ended questions from the patient surveys to develop response categories and subsequently quantify the categories using content analysis and matrices (Bauer, 2000). For the health care worker surveys, triad interviews, and key informant transcripts, two independent reviewers employed a thematic analysis approach by developing codes iteratively to create a codebook using MAXQDA 2007 (Marburg, Germany; (Joffe & Yardley, 2004). The reviewers reached an interrater reliability coefficient of .80 using the codebook with a subsample of transcripts. The results of the content analysis and the thematic analysis were subsequently divided into five major categories according to the social marketing conceptual framework: perceived barriers, perceived benefits, costs, place, and promotion.

RESULTS

Perceived Barriers

Barriers included structural barriers, such as transportation and lack of insurance, as well as knowledge and language barriers impeding access to health services or knowing which types of health screenings to request (see Table 2). In the patient survey, roughly equal numbers of Honduran and Mexican women had few concerns about the HPV vaccine (30% to 35%). Mexican women listed needing more information on a new vaccine (15%), potential side effects (15%), and concern about vaccinating young girls (10%) as possible concerns. One Mexican woman remarked, "I heard that they want to inject young girls, I think it should only be for adults," whereas another answered, "I would like to know who it (HPV) could affect and what age it is recommended." In contrast, Honduran women were more concerned with needing more information on a new vaccine (45%) and receiving a doctor's recommendation (20%), and less concerned with potential side effects (10%) or vaccinating young girls (5%). For example, one Honduran woman commented, "I don't think it is good to vaccinate so young, without knowing the vaccine-related symptoms."

Other misperceptions about the HPV vaccine were evident when survey participants were asked which women were most likely to receive the vaccine. Some comments suggested that many were not aware that the vaccine was targeted to young girls. For example, three Mexican women and one Honduran woman believed the vaccine was for women older than 40 years, confusing the vaccine for a medical treatment. Only two Mexican and two Honduran women (10% total) correctly identified the vaccine as appropriate for adolescent girls. When asked what type of women should receive the vaccine, six Honduran women made comments such as, "those women who change partners a lot," and "women who are sexually active" as likely vaccine candidates.

Triad interview participants also cited language and cultural issues as potential barriers to accessing health care. One woman explained, "Sometimes the doctors only speak English, and there is no one to translate, other times there are Spanish-speaking doctors who are embarrassed to speak Spanish." The participants cited the difficulty of taking time off from work; as one woman stated, "In the hours when the clinics are open, the boss will not give

permission to go.” Another remarked, “Many Hispanic people are not accustomed to going to get check-ups,” reflecting a belief that one only goes to the doctor when symptoms are present. Likewise, one nurse remarked, “These females don’t believe in doing the annual Pap, they leave themselves last, they come from southern Mexico, there are no doctors there, and they aren’t used to doing it. They can’t miss one day of work.” Another health care worker remarked, “The Americans are more educated, Hispanics are barely educated in health issues to consider it’s important to do preventive screenings.”

Perceived Benefits

In the patient survey, the primary motivators identified by Mexican women for requesting the HPV vaccine for their daughters were learning more information about the vaccine (35%), emphasizing the preventive benefits (25%), and desiring to be healthy (20%). For example, one Mexican woman remarked, “To do it for your children, that they stay healthy.” Similar responses were reiterated by Honduran women, mentioning the desire to be healthy (30%), emphasizing the preventive benefits (25%), and wanting more information (20%).

Triad interview participants’ positive view of vaccines influenced positive perceptions toward the HPV vaccine. Besides the public health benefits, another participant touted the life-saving potential of the vaccine, stating, “I imagine that when you get the vaccine, it is like when a child gets a vaccine against tetanus, whooping cough, polio, there would be true benefits ... it could save a lot of lives.” Another category that emerged was that the topic of the HPV vaccine gave the mother a chance to talk about a sensitive issue with her daughter. One participant remarked,

It is very important for me in my case to talk about this with my daughters, not just about HPV, its all the things we need to do, to talk [about], all the problems with sexual transmissions.

Costs: Concerns Regarding Price, Premarital Sex, and Side Effects

In the patient survey, the primary costs of the vaccine identified by Mexican women were price (55%), access barriers (e.g., time, transportation, legal status; 55%), and lack of information (45%). Lack of information (30%) was also a concern for Honduran women, as was price (20%). One woman commented, “there is a lack of information in the schools, and lack of programs.” Other domains, including religious beliefs, embarrassment, personal beliefs, family concerns, and fear of vaccines or needles were also mentioned also but by fewer respondents (<20%). An example of a religious belief was voiced by a Honduran woman who said, “From the time of creation and God, there were no vaccines, we should be able to cure ourselves naturally from this disease.”

Possible side effects and pain associated with injection were discussed by triad interview participants. One Mexican woman was concerned with, “whether the benefits outweigh the side effects ... the secondary effects.” In the key informant interviews, the health department provider said, “We don’t get a lot that would refuse to get it, but the uncertainty about the long-term effects is what they are concerned about ... they don’t want to be the guinea pig.” Moreover, she identified pain at the injection site as a cost, saying,

Most of them will say, well the first one I didn’t feel anything, it was ok, but the second one, yeah, I had a little, my arm was sore, my arm was something, a little bit more effects, it varies, some don’t really have any effects of it.

Some of the FQHC health care workers stated that their Latina patients were unaware that the vaccine was free for girls younger than 18 years through the federal Vaccines for Children (VFC) Program. As a result, there was the misperception of high costs among

clients. Some triad interview participants also cited the high costs of health care in general; one Mexican woman remarked, “Doctors are expensive, one doesn’t have the money to go.”

Another cost associated with the vaccine related to increasing the risk of premarital sex. In both key informant interviews, the providers identified a possible cost with the vaccine that it might be associated with premarital sex. The outreach clinic provider said,

For some parents, it’s like giving permission to give sex. The parents want to presume that they will be pure until married ... There is an image problem. These are tight-knit communities, self-conscious. Even to the extended family, what will the aunt think?

Similarly, the health department provider said, “This is a STD and you want to give them a vaccine so you’re trying to say it’s okay for them to have sex, like permission.” One nurse remarked, “We talk to them about HPV, but parents don’t think of sexual activity until their daughter reaches menstruation, [but] then 98% of parents agree to it after reading the literature.”

Place

Low participation in screening and vaccination programs might be linked to a “place” problem. It is often difficult for clients to go to the location for services because of transportation issues, conflicts with work hours, or appeal of the location. The Latina patients in this study did not have regular health care providers, let alone pediatricians for their children, so there was no opportunity for vaccination referrals. Moreover, our results indicate that women did not know where to obtain the HPV vaccine. In the patient survey, 25% of Honduran women, for instance, reported not knowing where to receive the vaccine as their major concern.

Promotion

Among the 35% of survey participants who had heard of the HPV, most reported having heard about it through television shows and advertisements, or from family or friends. However, in the triad interviews, the Internet was discussed as a source of reliable health information. One Mexican woman said, “If I am not sleeping well or I don’t feel well, we go to the Internet, and do what it says.” Another participant elaborated, “When I was diagnosed with high cholesterol, I went to the Internet to see what it was.”

For both the health care workers and patients, doctors were seen as the best source of information about the HPV vaccine. One woman talked about educational materials, explaining, “When I go to the doctor, I get brochures, I look at them all.” In the health care worker surveys, some of the nurses indicated a need for more Spanish-language materials in print and on television for more HPV-related education. Other health care workers mentioned that some patients had heard about the vaccine through television advertisements and were requesting it, whereas others had no knowledge of it, even confusing the HPV vaccine with prevention for HIV.

DISCUSSION

Current research suggests that Latina women hold many misperceptions about the HPV vaccine and the links between HPV infection and cervical cancer (Fernandez et al., 2009). In this article, we examined responses from Latina farmworkers who might be characterized by even lower HPV knowledge and awareness than other groups. Our findings indicate a generally favorable disposition toward vaccines in general, despite specific misperceptions in relation to the HPV vaccine. This is consistent with other studies examining positive

vaccine acceptability among Latina women (Scarinci, Garces-Palacio, & Partridge, 2007; Watts et al., 2009).

Wu et al. (2010) found that HPV vaccine knowledge was not related to behavior; however, concerns about impact on sexual behavior and risk of infection did show a relationship to vaccination status. In our study, concerns about preadolescent sexual activity, perceived risk of infection, and perceived safety risks emerged as themes related to barriers and costs from the qualitative data. Moreover, we found that self-reported motivation to receive the HPV vaccine was influenced by physician recommendation, belief in illness prevention, and risk perception. Despite ongoing Spanish-language HPV vaccine advertising campaigns, this study demonstrates that there continues to be low HPV vaccine awareness among particular subgroups such as Latina farmworkers, who might be labeled “late majority adopters” in terms of diffusion of innovations theory.

The primary perceived barrier voiced by both patients and health care providers was the lack of preventive screening behaviors and the priority of work demands over personal health care maintenance. The conditions of farm work are associated with both physical and psychosocial stressors, and workers might not have time to attend to regular health care visits (Magana & Hovey, 2003). Study participants expressed perceived barriers such as lack of knowledge about the vaccine—particularly safety concerns—and additional concerns relating to possibly encouraging premarital sexual activity. Finally, the attitude that the vaccine was only for women with multiple sexual partners was a frequently reported misperception. There was also an inaccurate belief about the appropriate age for receiving the vaccine, for example, “between 13 and 18 years” rather than the younger age range. Receiving education from a health care provider, especially in the context of an HPV-positive diagnosis, might diminish this misperception.

Regarding perceived benefits, Latina patients stressed the importance of the family and the desire to stay healthy. They also reported that having more knowledge would motivate them to make the decision to follow through with HPV vaccination for their daughters. Finally, participants expressed a positive attitude toward vaccines in general, possibly from successful pro-vaccination campaigns in their native countries, so we recommend the promotion of HPV vaccination as a normative behavior, to be completed in conjunction with the other age-appropriate vaccinations for preadolescents (Lazcano-Ponce et al., 2001). Based on the formative research, we recommend that a social marketing campaign to increase HPV vaccination in this population focus on increasing the perceived benefits (e.g., desire to stay healthy in accord with pro-vaccination attitudes) as the core product strategy (McKenzie-Mohr & Smith, 1999). Messages targeting this group should also emphasize that the benefits of cervical cancer prevention from age-appropriate vaccination will increase the likelihood of remaining healthy.

Primary cost concerns were associated with the price of the vaccine and the embarrassment caused by receiving a vaccine associated with sexual activity. More interpersonal information regarding free HPV vaccine programs (e.g., VFC) and allaying fears of vaccination leading to adolescent sexual behavior would help to reduce these costs. Moreover, there remains the perception in some Latino communities that low-income people cannot afford products such as new vaccines (Scarinci et al., 2007). Another qualitative study reported that low-income Latinas viewed financial costs for medical appointments and medicines to be one of the primary barriers for follow-up after an HPV diagnosis (Fernandez et al., 2009). We found that cost considerations were prioritized over possible safety considerations. Since the HPV vaccine is currently one of the most expensive vaccines, increasing access is a U.S. health policy issue (e.g., increasing HPV vaccination among the Medicaid-eligible population, subsidizing vaccination for women older than 18 years who

are currently not covered under the VFC Program), as well as a policy concern for the developing world where the disease burden of cervical cancer is greatest (Ott, Ullrich, Mascarenhas, & Stevens, 2011).

The findings suggest that health care providers— primarily doctors—and other interpersonal contacts such as friends and family members, are the most trusted conduits for information and recommendations about the vaccine for this subgroup. This is consistent with findings from Scarinci et al. (2007), who reported that Latina immigrants responded favorably to HPV vaccine advice from a doctor, church contacts, or peers. Placement strategies for this priority population should include strategies such as using mobile vaccination units or nonconventional places such as markets to increase access (Thackery & McCormack Brown, 2010). Literacy level–appropriate marketing materials targeting low-income Latina groups should explain the purpose of vaccination to help allay fears regarding sexual behaviors and vaccine safety, and provide information about free or low-cost vaccine programs.

This study has a number of limitations. First, our findings are based on a small sample size, limiting the transferability of the results to other contexts. We might have also benefited by surveying women in community-based settings to more effectively investigate place-related issues to health care access. Furthermore, there is great value in investigating men’s attitudes toward vaccine acceptance, since the vaccine is now approved for males (McRee, Reiter, Chantala, & Brewer, 2010).

Public health marketing campaigns for HPV vaccination need to identify priority populations for targeted behavior change programs and engage community partners in message design and creation. Current efforts are underway to develop a community-based intervention to increase HPV vaccination in this priority population. It has been estimated that increased vaccination and screening coverage for Latinas has the potential to substantially decrease incidence and mortality rates for cervical cancer by approximately 83% (Flores & Bencomo, 2009). Comprehensive, coordinated outreach programs aimed at reducing cervical cancer health disparities can be greatly informed by the application of community-based, social marketing research.

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TABLE 1

Demographic Characteristics of Patients, Triad Interviews, and Health Care Worker Participants

Characteristic ^a	Mexican (n = 20)	Honduran (n = 20)	Triad Interviews (n = 6)	Health Care Workers (n = 17)
Age (years)	32.7 (19–51)	35.9 (23–54)	37.7 (24–50)	42.1 (23–60)
Years of schooling	8.2 (0–13)	8.6 (4–18)	8.2 (2–15)	14.9 (12–18)
Years in the United States	11.9 (3–36)	11.3 (3–31)	16.0 (2–28)	20.0 ^b (4–53)
Income/week ^c (\$)	275 (0–650)	275 (0–750)	275 (200–400)	985 (385–1920)
Marital status; n (%)				
Married/living together	19 (95)	16 (80)	5 (83)	12 (71)
Single/other	1 (5)	4 (20)	1 (17)	5 (29)
Currently employed; n (%)	14 (70)	9 (45)	5 (83)	17 (100)
Regular health care provider; n (%)	3 (15)	5 (25)	4 (67)	16 (94)

^aValues are in means (range) for continuous variables and number (percentage) for categorical variables.

^bData are reported for 13 out of 17 health care workers who were born in either Central or South America, Puerto Rico, the Dominican Republic, or Mexico.

^cData reported represent median income values with categorical ranges.

TABLE 2

Qualitative Categories Grouped by Social Marketing Conceptual Framework

Theme/Topic	Mentioned by	Illustrative Quotes
Barriers		
Lack of transportation	M, H, TI	"Transportation ... I don't how to get to the clinic ... I don't have a car."
Immigration status	TI, KI	"Most of the people we work with are undocumented ... for programs like the pharmaceutical company program, it has to be documented, social security number, and so forth."
Lack of health insurance	M, H, TI, KI	"The vaccine is expensive, only those who have health insurance."
Language/limited English proficiency	TI	"Sometimes the doctors only speak English, and there is no one to translate, other times there are Spanish-speaking doctors who are embarrassed to speak Spanish."
Religious beliefs	M, H, TI, KI	"Beliefs in God ... you only do it when it is necessary to do so."
Competing priorities (e.g., work demands)	M, H, TI, HW	"Being too busy at work to worry and care for yourself." "In the hours when the clinics are open, the boss will not give permission to go."
Lack of information about where to get vaccine	M, H	"Not knowing where to get the vaccine."
Need more information about HPV vaccine	M, H, TI, HW	"I would like to learn more, I have heard very little about it. It seems there is always something new, we need to know the risks."
Misperceptions about HPV vaccine (e.g., target age, worries about side effects)	M, H, HW	"Those who are over 25 (years old or older) and are sexuality active." "Whether the benefits outweigh the side effects, what is grave, what isn't, the secondary effects."
Benefits		
Vaccines, in general, are viewed positively	TI, KI, HW	"To prevent that illness (HPV) and much more, for health."
Enhance mother/daughter communication	TI	"It is very important for me in my case to talk about this with my daughters, not just about HPV, its all the things we need to do, to talk, all the problems with sexual transmissions, it's very important, this is one of the ways to prevent you know."
Stay healthy for family and children	M, H, TI	"To do it for your children, that they stay healthy."
Costs		
Money	M, H, TI, HW	"Doctors are expensive, one doesn't have the money to go."
Increase the risk of premarital sex	M, H, TI, KI, HW	"Some of my friends say it's not good because it calls attention to sex and could lead to premarital sex."
Short- and long-term side effects	M, H, TI, KI	"I don't think it is good to vaccinate them when they are so young, without knowing the side effects the vaccine can have."
Place		
Geographic distance to health care services	M, H, TI	"Only for women who have a car, if they live too far away they will not be able to go. It is only for those that live nearby."
Fear of health care facilities	M	"I am afraid to go to the hospital."
Promotion		
Doctor's recommendation	M, H, TI, KI, HW	"Only if a doctor logically recommended it would I give my daughter the vaccine."
Internet and other media outlets (TV/radio)	M, H, TI, HW	"If I am not sleeping well or I don't feel well, we go to the Internet, and do what it says."
Educational materials and brochures	M, H, TI, HW	"When I go to the doctor, I get brochures, I look at them all."

NOTE: HPV = human papillomavirus; M = Mexican patient survey participants; H = Honduran patient survey participants; TI = triad interview participants; KI = key informant interview participants; HW = health care worker survey participants.