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Mexican-American Mothers' Perceptions Regarding Vaccinating Their Daughters Against HPV and Recommended Strategies to Promote Vaccine Uptake

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Uptake and completion of the HPV vaccine among Latina girls has been relatively low, despite mothers' generally positive attitudes toward the vaccine. Focus groups were used for an in-depth, qualitative investigation of Mexican-American mothers' beliefs about and perceived barriers regarding the HPV vaccine and their recommendations for vaccine promotion. Overall, women felt capable and motivated to take care of their daughters' health, and they noted the family-centered nature of health decisions and made an association between HPV vaccination and a girl's first menses. Findings from this study can be used to support woman-centered and culturally specific HPV vaccine promotion efforts.

Keywords *HPV vaccination, cervical cancer, health disparities, Mexican-Americans, qualitative research, focus groups*

Cervical cancer is the second most common cancer worldwide, and its prevention and control are key priorities of the World Health Organization (WHO, 2013). Although the developing world has a disproportionate number of cases of cervical cancer (Ferlay et al., 2008; WHO, 2013), there is also a significant cervical cancer disparity in the United States, in that Latinas carry a large burden of this disease. Over her lifetime, a Latina living in the United States is significantly more likely than her European American counterpart to be diagnosed with Human Papillomavirus (HPV)-related[1] invasive cervical cancer (11.3 versus 7.4 per 100,000 per year;

[1]HPV is a virus that is transmitted through sexual intercourse and sexual contact. In addition to cervical cancer, HPV is associated with cancers of the anus, oropharynx, penis, vagina, and vulva. It is estimated that HPV causes 33,200 cancers in the United States every year: 20,600 in women and 12,600 in men (CDC, 2014b).

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Centers for Disease Control and Prevention [CDC], 2014b). Cervical cancer mortality rates are similarly higher among Latinas (4.0 deaths per 100,000 vs. 2.2 deaths per 100,000; U.S. Cancer Statistics Working Group, 2010). Given the rapid expansion of the Latina/o population in the United States, without action, this health disparity is projected to grow exponentially in the coming decades (Saraiya et al., 2007).

In 2006, a quadrivalent vaccine against the most common strains of HPV (Markowitz et al., 2012), known to cause 70% of cervical cancers, was approved by the U.S. Food and Drug Administration (FDA; Bosch et al., 2008; CDC & Atkinson, 2011). This vaccine is currently available to patients at age 9 or older. The Advisory Committee on Immunization Practices (ACIP) recommends that all girls and boys be vaccinated at age 11 or 12. Those not vaccinated earlier can receive the vaccine through age 26 (for women) and 21 (for men) (CDC, 2007, 2011). Estimates are that widespread uptake of the vaccination would significantly reduce rates of cervical cancer (National Cancer Institute, 2014; Brisson, Van de Velde & Boily, 2011; Theroux, 2008), as well as help to prevent other HPV-related cancers (Chaturvedi, 2010). However, only 44.8% of Latina adolescents have completed the three shot series (CDC, 2014a). This low rate of vaccine uptake persists even though Latinas generally have been found to accept the vaccine. For example, Watts and colleagues (2009) found that 96.6% of Latina mothers surveyed indicated they would vaccinate their daughters against HPV.

In order to eliminate this gap between reported acceptability of the vaccine and actual use of the vaccine among Latinas, it is important not only to identify the barriers that might prevent a mother from having her daughter vaccinated, but also to understand how best to communicate information to eliminate these barriers. A considerable amount of work has identified potential barriers to HPV vaccination, including cost, lack of health insurance, lack of knowledge of the vaccine, lack of time, concern that the vaccine would promote sexual promiscuity in girls (because HPV is transmitted through vaginal, oral, and anal sex), and concerns about side effects (Morales-Campos, Markham, Peskin, & Fernandez, 2013; Kepka, Ulrich, & Coronado, 2012; Luque et al., 2010; Wu, Porch, McWeeney, Ohman-Strickland, & Levine, 2010; Bair, Mays, Sturm, and Zimet, 2008; Yeganeh, Kurtis, & Kuo, 2010; Brewer & Fazekas, 2007; Constantine & Jerman, 2007; Friedman & Shepeard, 2006; Olshen, Woods, Austin, Luskin, & Bauchner, 2005; Zimet, 2005).

There also could be certain cultural factors underlying this disparity. *Familismo*, a cultural value that involves a strong commitment to family and emphasizes the interconnectedness of family members (Toro-Morn, 2012), prompts individuals to take into account the needs and desires of the extended family, which could subsequently affect HPV vaccination (for example, if different family members have different opinions about the vaccine). Relatively little research has focused on the normative patterns of communication that might exist between Mexican American parents (particularly mothers) and their children in relation to HPV vaccination. However, researchers who have looked more broadly at sexual health discussion patterns and barriers to discussion among Latina mothers and their children have identified embarrassment and past familial behavior as major barriers: Latina mothers who were raised in homes not supportive of discussions of sexual topics were less likely than other mothers to have such discussions with their own daughters (Guilamo-Ramos et al., 2006; McKee & Karasz, 2006; Wilson, Dalberth, Koo, & Gard, 2010).

Despite this large body of literature on HPV vaccination in general and HPV vaccination among Latinas specifically, there are still gaps in our knowledge. First, work on HPV vaccination uptake among Latinas has not taken into account the fact that the U.S. Hispanic population comprises many diverse subgroups. These subgroups have different countries of origin and

cultures. Moreover, there is wide variation among Latina/o immigrants with respect to the number of years they have lived in the United States and their acculturation status. This could lead women to experience different barriers and/or to have different perceptions of HPV vaccination. We are not aware of any data that compare HPV vaccine uptake by Hispanic subgroups, but other related outcomes do vary by country of origin. For example, rates of cervical cancer vary widely in Central and South American countries: Peru and Honduras have cervical cancer rates of greater than 32.5 per 100,000 women, and Chile's rate is between 11.3 and 17.1 per 100,000 women (ACS, 2012). Pap test use also varies by subgroup: Mexican-American women have lower rates of screening than Puerto Ricans, Cubans, Dominicans, and Central and South Americans in the United States (ACS, 2012). Due to these potential differences between Hispanic subgroups, the current study was designed to focus exclusively on Mexican-Americans, who make up the largest Hispanic subgroup in the United States. (U.S. Census, 2011) and to elaborate on challenges to HPV vaccination that is perhaps unique to this population.

Second, although the need for increased education regarding HPV and the HPV vaccine has been emphasized (Zimet, 2005) in previous work, there remains limited research on how practitioners can best encourage HPV vaccination from a woman-centered perspective and how to communicate about these issues more effectively with this audience. With some exceptions (for example, Dempsey, Abraham, Dalton, & Ruffin, 2009; Vanslyke et al., 2008), the bulk of research in this area, although very useful in understanding basic barriers to HPV vaccination, has been quantitative (surveys or structured interviews). Much less scientific inquiry has identified what women themselves put forward as promising strategies for interventions to increase HPV vaccination uptake in their communities. This study makes a unique contribution beyond a focus on barriers, because we did not ask about barriers identified a priori; instead we solicited women's experiences regarding the sexual and reproductive health of their daughters, HPV vaccination, and how vaccination could best be promoted in their communities.

Thus, we aimed not only to identify factors that facilitate or impede HPV vaccination but also to explore Mexican-American mothers' suggestions regarding what strategies could best be implemented to encourage HPV vaccination in their communities. To address these aims, we conducted a series of in-depth focus groups to (a) examine the individual, interpersonal, and ecological factors that Mexican-American mothers experience as barriers to, or facilitators of, HPV vaccination and (b) explore Mexican-American mothers' suggestions about how best to communicate about and encourage HPV vaccination so that effective strategies to promote HPV vaccination could be identified.

METHOD

Participants

Six focus groups were conducted with a total of 50 women who were living in Los Angeles County, California. Two focus groups were conducted in Spanish, and four were conducted in English. To recruit women for the focus groups, we worked with a research agency (Viramontes Marketing Communications [VMC]) that specializes in recruiting Hispanic populations. VMC maintains community-based panels of Hispanics in Los Angeles County. Participants are recruited for these panels at community events and locations (e.g., fairs, coffee shops, parks). Women included in the

focus groups were randomly selected from this panel and were asked, via telephone, if they would like to participate in a focus group. Inclusion criteria were that participants be Mexican-American women, between the ages of 25 and 45 years, and have at least one daughter aged 9–14 years. There were no eligibility restrictions related to the daughters' HPV vaccination status. Approval for this study's protocol was obtained from the researchers' university Institutional Review Board. Participants were compensated $75.00 for their time.

Approximately one quarter (23%) of participants had some college education, 39% had a high school degree, and 39% had not completed high school. The majority of women (42%) were ages 31–35; 16% were ages 25–30; 16% were ages 36–40, and 3% were 40–45. Just under one quarter (22.2%) of the women were born in the United States; 77.8% were born in Mexico.

Procedures and Instrument

Focus groups of 8–10 women each were conducted based on a structured moderator's guide; group sessions lasted approximately 90 minutes. The researchers developed the moderator's guide using the Integrative Model of Behavioral Prediction (Fishbein, 2009) as a framework. This theoretical model specifies key individual, interpersonal, and ecological variables (i.e., attitudes, norms, self-efficacy, skills and abilities, environmental factors, and distal factors such as sociodemographics and culture) that impact health behavior. More specifically, the moderator's guide was designed to elicit an in-depth assessment of the participants' values, relationships with their daughters, and experiences with the HPV vaccine. For example, participants were asked to describe things that made them feel satisfied or unsatisfied with their relationships with their daughters and to express their hopes and dreams for their daughters. Participants were also asked to describe their attitudes and perceptions about and experiences with HPV, cervical cancer, and the HPV vaccine. In addition, participants expressed their suggestions for what would make women like them more likely to have their daughters vaccinated against HPV. Although a moderator's guide was prepared in advance and referred to throughout to structure discussion, the discussion was largely guided by the participants. Focus groups were moderated by a bilingual Latina for women who had been in the United States for a shorter amount of time; or by a White, English-speaking woman for the more acculturated groups. Both moderators had had extensive experience moderating focus groups and were given additional training specific to this research.

Data Analysis

All focus group discussions were videotaped, transcribed, and translated, as needed, for analysis. Data were analyzed using the framework analysis technique recommended by Krueger (1994) and Ritchie and Spencer (1994). This procedure is a matrix-based form of analysis, whereby a thematic framework is developed based on common themes identified in the focus groups and participant responses are indexed and mapped according to the framework. This procedure was chosen because it allows researchers to identify themes a priori (for example, themes identified in the literature) as well as through the iterative process of analysis. All of the researchers participated

TABLE 1
Barriers to HPV Vaccination and Recommendations for Intervention

Barrier	*Recommendation*
Beliefs	
Confusion over link between sex, HPV, and cervical cancer	Clearly and explicitly state the relationship between sexual activity, HPV, and cervical cancer
Confusion over appropriate age to vaccinate	Clearly report age-range for which vaccine is indicated; explicitly state that vaccination can occur before a girl's first menses and before initiation of sexual activity
General lack of information with regard to benefits and risks	Provide several educational materials targeting Latinas so mothers can feel confident in their decision to vaccinate
Family members	
Concern that husband and mother would disapprove	Provide materials for mothers to give husbands and mothers
Worry about conversation with daughter	Provide materials for mothers to give daughters and materials for mothers to have on hand to guide the conversation with their daughters
Vaccination setting	
Do not want vaccine to be administered in nontrustworthy setting	Ensure vaccination occurs in trustworthy setting where mother can be present
Educational materials	
Many educational materials lack cultural relevance	Ensure materials are available in Spanish; link vaccination to cultural values for daughters such as "protecting" one's children, education, and motherhood

in the analysis of the data, and we achieved consensus regarding the emergent themes. During data analysis, we were mindful of Tracy's (2010) criteria for qualitative research, for example, by being self-reflexive of our own biases and seeking to triangulate emergent themes across focus group participants and across researchers. To protect confidentiality, only first names of participants were used. We also report participants' ages if provided.

RESULTS

Analysis of the focus groups produced findings in three key areas: (a) beliefs about HPV, cervical cancer, and the HPV vaccine, (b) perceived barriers to getting the HPV vaccine, and (c) recommendations for promoting use of the HPV vaccine. Table 1 summarizes the key barriers and recommendations for intervention.

Beliefs

Lack of Connection Between Sex, HPV, and Cervical Cancer

Although most women knew what both HPV and cervical cancer were, the links between sexual activity, HPV, and cervical cancer were not clear to them.[2]

As Gabriela said, "I don't think [we get cervical cancer] because of sex, from what I've read we're all are born and have cancer and it just develops differently in everyone or it doesn't."

Confusion Over Purpose of Vaccine

Many women had only a vague knowledge of the HPV vaccine and were confused about its specific purpose. Asucena (age 39) asked, "Isn't it [the HPV vaccine] the same one as the cervix one? . . . there are too many names for it." Maria (age 30) agreed: "It's confusing, you read it one way and then you see it another." Josie added, "It makes you think it's three different diseases."

Confusion Over Recommended Age

Although many women understood that it was ideal to vaccinate a girl before she becomes sexually active, and many realized that girls become sexually activity as young as 11 years old, the majority of women still thought that their own daughters should not be vaccinated until age 13 or 14. This probably is due to a strong association between the vaccine and a girl's first menses. Many participants identified menstruation as a key moment in a girl's life and thought that the vaccine should not be given until after menstruation had begun. As Angie (age 41) said, "I assumed they would start a little older . . . because at age 9 they're not menstruating yet, most of them. I assume it goes along with it because of all the changes that the female body goes with it."

Concern of Side Effects

Several women mentioned that potential side effects worried them. Some noted minor side effects, such as a rash or swelling, but Irma had heard of someone experiencing something much more severe, which she attributed to the vaccine: "My friend had her daughter vaccinated against HPV, and her daughter had a really bad reaction to it. That's why I'm debating if I should . . . her daughter ended up in the mental hospital." However, despite this concern over side effects, most women were confident in their ability to make the right decision for their daughters' health, provided that they had the right information. Most women who were concerned about side effects

[2]Once this part of the discussion was over, the moderators clarified what HPV is, how it is transmitted, and its connection to cervical cancer. Participants were also given information sheets about HPV and cervical cancer at the end of the focus group.

were simply unsure of what, if any, the side effects were and how severe they might be. As Ivonne (age 25) asked, "... what are the side effects? ... if I take my daughter, what would it make her do, how would her body feel different? I would want to know the side effects."

Barriers

Grandmothers and Husbands as Barriers

The majority of the women in the focus groups were not concerned that giving their daughters the HPV vaccine condoned sex; in fact, many women had a realistic view about the likelihood that their daughter might become sexually active at a young age. However, many women worried that their husbands and mothers or mothers-in-law would believe that the vaccine would make their daughters more likely to have sex at a young age, and thus would not approve of them having their daughters vaccinated. Lourdes (age 45) commented:

> I'm not concerned about my daughter, I'm concerned about my husband. He's the one who is overprotective with her. I don't want him to misunderstand the concept of getting the vaccine for her. ... It doesn't mean she's going to have sex, it's just a prevention.

Mariana (age 31) agreed:

> I'm just afraid of my husband and my mom too. They're from a different generation. [My mom will think] that we're opening her up to go do things she's not supposed to. And my husband the same, he's really overprotective with her and he's going to think that we're giving her permission.

Lack of Information

Most of the women who were hesitant about having their daughters vaccinated were not inherently against the vaccine – they just wanted more information. As Maricela (age 40) noted, "I'm not just going to jump the gun – I want to do my research." Patricia similarly believed that she "would need more information about the vaccine to make that decision." Many women reported that, after having gotten the information they needed, they would be likely to vaccinate their daughter. Maria P. (age 41) commented,

> I think, for myself, I haven't done the research about it but if I did and thought it was a benefit to my daughter, I would. Right now I wouldn't feel comfortable with it, once I did the research, read, talked to my doctor, and knew the benefits, I think I would lean towards it."

In particular, a lack of information targeted toward Mexican-Americans and/or Latinas in general was noted: As Linda reported, "I would like more information about HPV for the Spanish community."

Daughter's Feeling About the Vaccine

Most women said that they would discuss the vaccine with their daughters. Some said that they would simply say that the vaccine is "to prevent cancer," whereas others would "tell her everything, from beginning to end." Some indicated that if their daughter did not want the vaccine, they would not make her get it. Lourdes (age 45) noted, "I would take her to the doctor, she can explain to her and it's up to her also. I don't want to force her, but I'm sure if she had the right information, she would agree."

Economic Barriers

Some women were concerned that the vaccine would be expensive, but none said it would prevent them from having their daughter vaccinated. Almost everyone knew where they could obtain the HPV vaccine.

Recommendations for Promotion of the HPV Vaccine

Increased Information

Many women indicated that they would like more information on the vaccine, its benefits, and its side effects. In particular, women wanted information targeted toward their communities. These women felt confident in their ability to make the right choice for their daughters' health, but they wanted to make sure it was an informed decision. Many women thought that an ideal spokesperson for promotion of the vaccine would be somebody associated with the medical field (e.g., a doctor) or someone who had had personal experience with cervical cancer. There was no strong preference for either a female or a male spokesperson.

Family-Centered information

Women in the focus groups also wanted printed materials that they could physically give to their husbands and mothers, which they thought would mitigate resistance, as well as an age-and-language appropriate booklet or brochure to give their daughters to help facilitate potential conversations about sex and the vaccine. Griselda (33) commented that, when talking to her daughter, she "would have to find the words; I would like to have a brochure with me with all the answers [to my daughter's questions]."

Setting for Administration of Vaccine

The women in the focus groups all thought that it was important for the vaccines to be administered by a doctor. Some women said that their daughters' schools were trusted sources of information and, so, might be ideal locations for the vaccine to be administered. Others did

not want the school to administer vaccines—largely because they thought that the schools were unsanitary or were unable to give their children the personal attention they would expect in a medical situation. Regardless of preference for location, almost all of the women wanted to be present while their daughter received each shot. As Elvira (31) said, "If there were to be a negative reaction to it, I would want to be with her and support her."

Association of Vaccine With Health and Motherhood

Most women associated vaccines with prevention, protection, and health. The women believed that it was their responsibility to keep their daughters healthy and ensure that they would have happy lives. Most thought that vaccines were an important component of ensuring healthy lives for their daughters. For example, future motherhood was a crucial aspect of what many women envisioned as happy lives for their daughters, although women noted that motherhood should come after their daughters had achieved educational and career goals. In particular, women believed that the HPV vaccine could protect their daughters' reproductive health. Maria (age 30) summed what many participants said, "I would vaccinate to protect her, so she can have a productive life, so she can have children. If she were to get cancer early on she wouldn't be able to have children."

DISCUSSION

These findings provide support for prior research (see Brewer & Fazekas' [2007] meta-analysis and Zimet's [2005] review) on factors that facilitate and hinder Mexican-American mothers' experience of getting their daughters vaccinated against HPV and offer several new insights that contribute to the scientific discourse on HPV vaccination. First, as others have found, although many women knew about cervical cancer and HPV, many were confused about the links between sexual activity, HPV, and cervical cancer. Similarly, many were confused about the purpose of the vaccine. A significant knowledge-related barrier to getting daughters vaccinated was confusion over the age at which girls should be vaccinated. Although many women understood that the vaccine should be given before the onset of sexual activity and that sexual activity could begin at a young age, the majority of women still thought that 9 years old (the earliest age a girl can be vaccinated) was too young. This is probably due to a persistent association of sexual activity with a girl's first menses, as many women thought that 13 was a more appropriate age to receive the vaccination.

Overall, women felt positively toward the vaccine, and they said that they would get it for their daughters to "protect" them and to prevent cancer. This is probably grounded in the cultural belief and value that women should be caretakers and that it is the mother's role to make sure her children are protected (see Guendelman, Malin, Herr-Harthorn, & Vargas, 2001, for a review of orientations to motherhood among Mexican women). Some women mentioned the possibility of side effects, but, overall, participants thought the side effects would be mild (such as a rash or swelling), with the exception of one participant who told an anecdote about someone she believed had developed a mental illness as a result of the vaccine. Any hesitancy to get her daughter vaccinated had more to do with the mother's belief she had not "done her homework"

to thoroughly research the vaccine. The women in these focus groups were very proactive about their children's health, and they believed that they have the responsibility and ability to research the health care their children receive. Thus, most women said that, once they had evaluated the information on the HPV vaccine and felt assured that the benefits outweighed the risks, they would be likely to have their daughters vaccinated.

Besides lack of information, other potential barriers to vaccination include women's worries about what their husbands or mothers would think. Contrary to findings by others (e.g., Friedman & Shepheard, 2006; Morales-Campos et al., 2013), the women in our focus groups, for the most part, did not think the vaccine would encourage their daughters to have sex. They did think, however, that their husbands and their own mothers would draw this conclusion. To combat this, many women wanted printed materials that they could hand to their husbands and mothers to educate them about the benefits of the vaccine and assuage their fears that the vaccine would encourage promiscuity. Some women also said that, if their daughters did not want the vaccine, they would not make them get it. Brochures or booklets were mentioned as a way to educate the daughter about the vaccine and as a way to help the mother work through a conversation that could be embarrassing or tricky to navigate.

One innovation of the current study is our focus on recommendations for vaccine promotion efforts. Thus, based on these findings, we present several recommendations for further promotion of the vaccine. First, women need more information about the vaccine, and information should be available in both Spanish and English. This information should clearly and explicitly state how HPV is transmitted; explain the links between sexual activity, HPV, and cervical cancer; and explain the role of the vaccine in preventing HPV and cervical cancer. This information should come from a credible source that Mexican-American women trust, such as a doctor or someone who has had personal experience with cervical cancer. Materials should also build on mothers' association of the vaccine with their daughters' reproductive health and their desire to see their daughters live successful lives as professional women and as mothers.

Second, although mothers are often the engineers of their daughters' medical care, the decision to vaccinate one's daughter is made in the context of one's family. This corresponds to Kepka and colleagues' (2012) work, which shows that mothers who thought that their daughter's father would approve of the HPV vaccine were more likely to vaccinate their daughters. The family-centered context of this decision is grounded in Mexican-Americans' cultural value of the family. This value, known as *familismo,* emphasizes commitment to family and the interconnectedness of family members (Toro-Morn, 2012). Our study shows that, for Mexican-American women, this family-centered decision may include not just the nuclear family, but also the extended family: For instance, many women cited their own mothers' opinions as potential barriers to getting their daughters vaccinated against HPV. Thus, women need materials to facilitate conversations about the vaccine with these important family members. Materials should be made available in appropriate literacy levels, ages, and languages for women to give to their mothers and husbands (who might not understand the vaccine or who might believe it promotes sexual promiscuity) and to their daughters. Additional materials could provide women with information about how to talk to their husbands, daughters, and other family members about the HPV vaccine. To help ease the concerns of those (e.g., fathers, grandmothers) who believe that the vaccine would encourage sexual promiscuity or that one's daughter does not need the vaccine until she is much older and sexually active, these materials should clearly explain that a girl should be vaccinated before

she is sexually active. In addition, materials should explain that a girl can be vaccinated before her first menses. These materials should be developed in culturally specific ways that account for language preferences, cultural values, and beliefs.[3] Materials should also take into account generational differences regarding beliefs and attitudes about the HPV vaccine.

Third, the administration of the vaccine needs to be done in a safe, trusted setting where the mother can attend to support her daughter. For some women, their daughters' schools were examples of such settings; however, other women did not believe that the schools could provide adequate medical care, if needed. The women wanted their daughters vaccinated in a clean location, with a doctor present, and where their daughters would be sure to receive personal attention and quality care. Implicit in our focus group discussions was the notion that vaccines are generally painful and unpleasant for girls and that mothers want to be present to take care of their daughters.

Several limitations of this study must be noted. First, these focus groups were conducted with women of Mexican origin living in the Los Angeles area. Given the diversity of Latinas in the United States, it is crucial to obtain information on specific subgroups, and we caution against generalizing findings to other Latina subgroups without further research. In addition, although the panel from which we recruited participants had a diverse representation of individuals, recruitment was not conducted using probability sampling techniques and thus may not accurately represent all Mexican American mothers in Los Angeles. Second, the sample size of 50 is relatively small, but typical for qualitative studies, which seek to produce in-depth understanding as opposed to statistical generalizability (Tracy & Geist-Martin, 2014). Although we found that our focus groups "reached saturation" on the topics discussed (i.e., many women in the different groups brought up the same concerns and issues), and we thus believe the sample size is sufficient to present a diversity of perspectives, findings should nonetheless be generalized with caution (Krueger & Casey, 2009). Finally, because women bear a larger portion of the burden from HPV-related cancers (CDC, 2012), this study was focused only on HPV vaccination in girls. Future researchers should also examine perceptions regarding HPV vaccination in boys.

CONCLUSION

The results of the present study offer an in-depth look into Mexican-American women's beliefs, attitudes, and behavioral intentions regarding HPV vaccination. This study also offers several unique insights, including mothers' association of the vaccine with a daughter's first menses, mothers' concerns over what their husbands and mothers would think, and mothers' desire to research and understand the healthcare decisions they make for their children. These findings also translate into operable recommendations for health promotion and education campaigns. Mexican American mothers need more information on the HPV vaccine on all fronts —for themselves, their daughters, and their husbands and mothers. Although organizations such as the Centers for Disease Control and Prevention offer materials in Spanish (for example, *La vacuna*

[3]For instance, the authors of this article were able to use the data discussed here to design a culturally relevant narrative intervention, which showcased two generations of a Mexican American family and specifically wove the barriers and knowledge gaps identified here into the script (Baezconde-Garbanati et al., 2014; Frank, Murphy, Chatterjee, Moran, & Baezconde-Garbanati, in press).

HPV para preadolescentes y adolescents [CDC, 2013]), targeted, culturally relevant materials that go beyond mere translations of existing materials into Spanish are necessary to promote HPV vaccination with this group. Materials need to be not just language appropriate, but culturally relevant, literacy-level appropriate, and age and gender specific (e.g., for daughters, for fathers, for grandmothers).

The HPV vaccine has been shown to be effective, and its use can help to save lives, especially among vulnerable and high-risk population groups, such as women of Hispanic origin. Given the significant disparity in cervical cancer morbidity and mortality, promotion of the HPV vaccine in Hispanic populations, with particular focus on cultural differences between Hispanic women from different countries of origin, has important public health implications. Addressing the specific communication needs of this population can go a long way toward the prevention and control of cervical cancer.

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REFERENCES

Baezconde-Garbanati, L. A., Chatterjee, J. S., Frank, L. B., Murphy, S. T., Moran, M. B., Werth, L. N., . . . , & O'Brien, D. (2014). Tamale lesson: A case study of a narrative health communication intervention. *Journal of Communication in Healthcare*, *7*(2), 82–92.

Bair, R. M., Mays, R. M., Sturm, L. A., & Zimet, G. D. (2008). Acceptability of the human papillomavirus vaccine among Latina mothers. *Journal of Pediatric and Adolescent Gynecology*, *21*, 329–334.

Bosch, F. X., Burchell, A. N., Schiffman, M., Giuliano, A. R., de Sanjose, S., Bruni, L., . . . , Muñoz, N. (2008). Epidemiology and natural history of human papillomavirus infections and type-specific implications in cervical neoplasia. *Vaccine*, *26*, K1–16.

Brewer, N. T., & Fazekas, K. I. (2007). Predictors of HPV vaccine acceptability: A theory-informed, systematic review. *Preventive Medicine*, *45*, 107–114.

Brisson, M., Van de Velde, N., Boily, M. (2011). Different population-level vaccination effectiveness for HPV types 16, 18, 6 and 11. *Sexually Transmitted Infections*, *8*, 41–43.

Centers for Disease Control and Prevention (CDC). (2007). Quadrivalent human papillomavirus vaccine: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *Morbidity & Mortality Weekly Report*, *56*(No. RR-2), 1–24.

Centers for Disease Control and Prevention (CDC). (2011). Recommendations on the use of quadrivalent human papillomavirus vaccine in males—Advisory Committee on Immunization Practices (ACIP). *Morbidity & Mortality Weekly Report*, *60*, 1705–1708.

Centers for Disease Control and Prevention (CDC). (2012). Human papillomavirus–associated cancers—United States, 2004–2008. *Morbidity & Mortality Weekly Report*, *61*, 258–261.

Centers for Disease Control and Prevention (CDC). (2013). *La vacuna HPV para preadolescentes y adolescents*. Retrieved from http://www.cdc.gov/vaccines/who/teens/ vaccines/hpv-sp.html.

Centers for Disease Control and Prevention (CDC). (2014a). *Estimated vaccination coverage of three dose HPV series completion among adolescents aged 13-17 years by race/ethnicity and by state and selected area – National Immunization Survey-Teen, United States, 2013*. Retrieved from http://www.cdc.gov/vaccines/imz-managers/coverage/nis/teen/tables/ 13/tab16_HPV3_race_2013.pdf.

Centers for Disease Control and Prevention (CDC). (2014b). *Human papillomavirus (HPV)-Associated cancers*. Retrieved from http://www.cdc.gov/cancer/hpv/statistics/.

Centers for Disease Control and Prevention (U.S.), & Atkinson, W. (2011). *Epidemiology and prevention of vaccine-preventable diseases* (12th ed.). Atlanta, GA: Dept. of Health and Human Services Centers for Disease Control and Prevention.

Chaturvedi, A. K. (2010). Beyond cervical cancer: Burden of other HPV-related cancers among men and women. *Journal of Adolescent Health*, *46*, S20–S26.

Constantine, N. A., & Jerman, P. (2007). Acceptance of human papillomavirus vaccination among Californian parents of daughters: A representative statewide analysis. *Journal of Adolescent Health*, *40*, 108–115.

Dempsey, A. F., Abraham, L. M., Dalton, V., & Ruffin, M. (2009). Understanding the reasons why mothers do or do not have their adolescent daughters vaccinated against human papillomavirus. *Annals of Epidemiology*, *19*, 531–538.

Ferlay, J., Shin, H-R., Bray, F., Forman, D., Mathers, C., & Parkin, D. M. (2010). Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. *International Journal of Cancer*, *127*, 2893–2917.

Fishbein, M. (2009). An integrative model for behavioral prediction and its application to health promotion. In R. J. DiClemente, R. A. Crosby, & M. C. Kegler (Eds), *Emerging theories in health promotion practice and research* (2nd ed., pp. 215–234). San Francisco, CA: Wiley.

Frank, L. B., Murphy, S. T., Chatterjee, J., Moran, M. B., Baezconde-Garbanati, L. (in press). Telling stories, saving lives: Creating narrative health messages. *Health Communication*.

Friedman, A. L., & Shepeard, H. (2006). Exploring the knowledge, attitudes, beliefs, and communication preferences of the general public regarding HPV: Findings from CDC focus group research and implications for practice. *Health Education & Behavior*, *34*, 471–485.

Guendelman, S., Malin, C., Herr-Harthorn, B., & Vargas, P. N. (2001). Orientations to motherhood and male partner support among women in Mexico and Mexican-origin women in the United States. *Social Science & Medicine*, *52*, 1805–1813.

Guilamo-Ramos, V., Dittus, P., Jaccard, J., Goldberg, V., Casillas, E., & Bouris, A. (2006). The content and process of mother–adolescent communication about sex in Latino families. *Social Work Research*, *30*, 169–181.

Kepka, D. L., Ulrich, A. K., & Coronado, G. D. (2012). Low knowledge of the three-dose HPV vaccine series among mothers of rural Hispanic adolescents. *Journal of Health Care for the Poor and Underserved*, *23*, 626–635.

Krueger, R. A. (1994). *Focus groups: A practical guide for applied research*. Ann Arbor, MI: University of Michigan.

Krueger, R. A., & Casey, M. A. (2009). *Focus groups: A practical guide for applied research* (4th ed.). Thousand Oaks, CA: Sage.

Luque, J. S., Castañeda, H., Tyson, D. M., Vargas, N., Proctor, S., & Meade, C. D. (2010). HPV awareness among Latina immigrants and Anglo American women in the southern U.S.: Cultural models of cervical cancer risk factors and beliefs. *NAPA Bulletin*, *34*(1), 84–104.

Markowitz, L. E., Tsu, V., Deeks, S. L., Cubie, H., Wang, S. A., Vicari, A. S., & Brotherton, J. M. (2012). Human papillomavirus vaccine introduction–the first 5 years. *Vaccine*, *30*(Suppl 5), F139–148.

McKee, M. D., & Karasz, A. (2006). "You have to give her that confidence": Conversations about sex in Hispanic mother-daughter dyads. *Journal of Adolescent Research*, *21*, 158–184.

Morales-Campos, D. Y., Markham, C. M., Peskin, M. F., & Fernandez, M. E. (2013). Hispanic mothers' and high school girls' perceptions of cervical cancer, human papilloma virus, and the human papilloma virus vaccine. *Journal of Adolescent Health*, *52*, S69–S75.

National Cancer Institute. (2014). Accelerating HPV vaccine uptake: Urgency for action to prevent cancer. A report to the president of the United States from the president's cancer panel. Bethesda, MD: National Cancer Institute. Available at http://deainfo.nci.nih.gov/advisory/pcp/annualReports/HPV/index.htm.

Olshen, E., Woods, E. R., Austin, S. B., Luskin, M., & Bauchner, H. (2005). Parental acceptance of the human papillomavirus vaccine. *Journal of Adolescent Health*, *37*, 248–251.

Ritchie, J., & Spencer L. (1994). Qualitative data analysis for applied policy research. In A. Bryman & R. G. Burgess (Eds.), *Analyzing qualitative data* (pp. 173–195). New York, NY: Routledge.

Saraiya, M., Ahmed, F., Krishnan, S., Richards, T. B., Unger, E. R., & Lawson, H. W. (2007). Cervical cancer incidence in a prevaccine era in the United States, 1998–2002. *Obstetrics & Gynecology*, *109*, 360–370.

Theroux, R. (2008). The HPV vaccine: Rates, attitudes, and acceptibility. *Nursing for Women's Health*, *12*, 423–426.

Toro-Morn, M. (2012). Familismo. In S. Loue & M. Sajatovic (Eds.), *Encyclopedia of immigrant health* (pp. 672–674). New York, NY: Springer.

Tracy, S. J. (2010). Qualitative quality: Eight "big-tent" criteria for excellent qualitative research. *Qualitative Inquiry*, *16*, 837–851.

Tracy, S. J., & Geist-Martin, P. (2014). Organizing ethnography and qualitative approaches. In L. Putnam & D. K. Mumby (Eds.), *Handbook of organizational communication* (3rd ed., pp. 245–269). Thousand Oaks, CA: Sage.

U.S. Cancer Statistics Working Group. (2010). *United States cancer statistics: 1999–2007 incidence and mortality web-based report*. Atlanta, GA: Department of Health and Human Services, Centers for Disease Control and Prevention, and National Cancer Institute.

U.S. Census. (2011). The Hispanic population: 2010. *2010 Census Briefs.* U.S. Department of Commerce Economics and Statistics Administration. U.S. Census Bureau. Retrieved from http://www.census.gov/prod/cen2010/briefs/c2010br-04.pdf

Vanslyke, J. G., Baum, J., Plaza, V., Otero, M., Wheeler, C., & Helitzer, D. L. (2008). HPV and cervical cancer testing and prevention: knowledge, beliefs, and attitudes among Hispanic women. *Qualitative Health Research*, *18*, 584–596.

Watts, L. A., Joseph, N., Wallace, M., Rauh-Hain, J.A., Muzikansky, A., Growdon, W.B., & del Carmen, M.G. (2009). HPV vaccine: A comparison of attitudes and behavioral perspectives between Latino and non-Latino women. *Gynecologic Oncology*, *112*, 577–582.

Wilson, E. K., Dalberth, B. T., Koo, H. P., & Gard, J. C. (2010). Parents' perspectives on talking to preteenage children about sex. *Perspectives on Sexual and Reproductive Health*, *42*(1), 56–63.

World Health Organization. (2013). *Comprehensive cervical cancer prevention and control: A healthier future for girls and women*. Retrieved from http://apps.who.int/iris/bitstream/ 10665 /78128/3/9789241505147_eng.pdf?ua=1.

Wu, J. P., Porch, E., McWeeney, M., Ohman-Strickland, P., & Levine, J. P. (2010). Knowledge and concerns related to the human papillomavirus vaccine among underserved Latina women. *Journal of Lower Genital Tract Disease*, *14*, 155–161.

Yeganeh, N., Curtis, D., & Kuo, A. (2010). Factors influencing HPV vaccination status in a Latino population and parental attitudes towards vaccine mandates. *Vaccine*, *28*, 4186–4191. doi:10.1016/j.vaccine.2010.04.010

Zimet, G.D. (2005). Improving adolescent health: Focus on HPV vaccine acceptance. *Journal of Adolescent Health*, *37*, S17–S23.