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Salient factors among Hispanic parents in South Florida rural communities for vaccinating their children against human papillomavirus

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Abstract

Purpose: Few studies have tried to understand the factors related to HPV vaccination among Hispanics living in rural communities in the United States (US). Nationally, HPV vaccination among Hispanics is suboptimal (26.1%) compared to the HealthyPeople 2020 goal of 80% and even more suboptimal in rural communties. This study aimed to determine the salient factors among Hispanic parents for vaccinating their children against HPV and for designing a future HPV prevention intervention for Hispanics.

Design and methods: A descriptive qualitative design was used. Saturation was reached after conducting four focus groups with 23 Hispanic parents from rural communities in South Florida. Directed content analysis using the Theory of Planned Behavior (TPB) constructs was used to analyze the transcripts.

Results: All TPB constructs were identified as salient factors for HPV vaccination including background factors, attitudes towards the behavior, perceived norms, perceived behavioral control, actual control, intention, and behavior.

Conclusions: Addressing HPV vaccination by developing educational programs based on the TPB and tailored to meet the needs of Hispanic parents is urgently needed to prevent HPV among

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CRediT authorship contribution statement

Madeline Fernandez-Pineda: Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing - original draft, Writing - review & editing, Project administration. **Rosina Cianelli:** Conceptualization, Methodology, Formal analysis, Investigation, Writing - original draft, Writing - review & editing, Supervision. **Natalia Villegas:** Conceptualization, Methodology, Formal analysis, Investigation, Writing - original draft, Writing - review & editing, Project administration. **Yui Matsuda:** Formal analysis, Writing - original draft, Writing - review & editing. **Evelyn Scarlett Iriarte Parra:** Writing - review & editing. **Nilda Peragallo Montano:** Conceptualization, Methodology, Formal analysis, Writing - original draft, Supervision.

Hispanics in rural US communities. This approach can also serve as a directive to target HPV vaccination among Hispanics in other rural areas in the US.

Practice implications: Pediatric nurses must proactively promote and recommend the HPV vaccine (HPVV), educate parents on having sex-related discussions with their children, include children in the HPVV education and decision, bundle the HPVV with other child vaccines, and utilize reminder systems to ensure completion of the vaccine series.

Keywords

Human papillomavirus vaccine uptake; Hispanic/Latino parents; Theory of planned behavior; Rural Hispanics

Introduction

In the United States (US), about 79 million people are infected with human papillomavirus (HPV), and an additional 14 million become infected annually (Centers for Disease Control and Prevention [CDC], 2019a). Several HPV strains are responsible for 33,700 annual cases of cancer of the cervix, vulva, penis, anus, vagina, and oropharynx (CDC, 2019b).

As the Hispanic population is among the fastest-growing in the US, HPV infection rates and HPV-related cancer rates among Hispanics add significantly to the HPV burden (CDC, 2019c; Pew Research Center, 2011). Hispanic women in the US are 1.7 times more likely to develop high-risk HPV infections in comparison to other racial/ethnic groups (Seal, Garces-Palacio, Halanych, & Scarini, 2012). Furthermore, Hispanic women have the highest incidence rate of HPV-related cervical cancer (about 9.8 per 100,000 women) and the second-highest mortality rate due to HPV-related cervical cancer (about 2.7 per 100,000 women) when compared to women of other ethnicities/races (CDC, 2016a). Additionally, Hispanic men are more affected by HPV-related penile cancer when compared to non-Hispanic men with an incidence rate of 1.2 and 0.8 per 100,000 respectively (CDC, 2019c).

Although Hispanics represent diverse nationalities, they share common risk factors for HPV, such as poverty, income inequality, unemployment, immigration issues, and low educational attainment (Branch, Harvey, Zukoski, & Warren, 2010; CDC, 2018a). These risk factors have been found to be more significant for Hispanics living in rural communities, particularly those who are migrant and seasonal farmworkers when compared to Hispanics living in urban areas (Branch et al., 2010; Watson-Johnson et al., 2012). Additional risk factors shared among Hispanics include cultural norms and traditional gender role (TGR) beliefs, such as *familismo, machismo,* and *marianismo* (Rapid Response Service, 2013; Seal et al., 2012).

Familismo is the strong bond to family, where the needs of the family come before individual needs and decisions are made collectively (Seal et al., 2012). *Machismo* defines men as providers, in control of women, and tough (Ferrer et al., 2016). Negative influences of *machismo* include early sexual initiation, multiple sex partners, and unprotected sex (Seal et al., 2012). On the other hand, *marianismo* defines a woman's role as being submissive to men, abstinent until after marriage, silent, and altruistic (Ferrer et al., 2016). The negative

influences of *marianismo* include sexual naivety and little to no skills for negotiating safer sexual practices (Seal et al., 2012).

Other authors, however, highlight *familismo, machismo,* and *marianismo* as protective factors in which women carry the responsibility of caring for others, while the man is the one who provides family financial support (Aragones, Genoff, Gonzalez, Shuk, & Gany, 2016; Bonilla-Rodriguez, 2011). Hispanic mothers put the health of their children first, sacrificing their own needs and doing what is necessary to overcome barriers, such as lack of access to healthcare, cost of medications/vaccines, and lack of insurance to ensure their children are healthy and protected (Aragones et al., 2016). Usually, Hispanic men are not involved in the day to day actions or decisions needed to seeking care (Ferrer et al., 2016).

To reduce the burden of HPV and HPV-related cancers, primary prevention efforts are focused on education and promotion of the HPV vaccine (HPVV), which is 97–100% effective in preventing HPV infection (CDC, 2018b). The current HPVV guidelines recommend females and males ages 9 to 14 to receive 2 doses over 6 months and for females and males ages 15 to 26 to receive 3 doses over about 8 months (CDC, 2020). The HPVV is given free of charge through the federally-funded Vaccines for Children Program (CDC, 2016b) and is recommended but not mandated in Florida where this study was conducted (The Florida Senate, 2020). HealthyPeople 2020's goal for national HPV vaccination coverage is set at 80% (Office of Disease Prevention and Health Promotion [ODPHP], 2020).

However, in Florida, when comparing statistics for Hispanic and White adolescents, Hispanics have lower HPV vaccination percentages, 26.1% versus 38.0% respectively (CDC, 2018c). These suboptimal rates are mainly affected by Hispanic parents' decisions regarding vaccinating their children for HPV (National Foundation for Infectious Diseases [NFID], 2016). Furthermore, HPVV rates among Hispanics in rural communities have been reported as even lower, partly due to limited access to health care services (Kepka, Ulrich, & Coronado, 2012; Luque, Raychowdhury, & Weaver, 2012).

Two established barriers to HPVV uptake among rural and urban living Hispanic parents that have been identified in the existing literature are lack of HPVV awareness and lack of HPVV knowledge (Kepka, Coronado, Rodriguez, & Thompson, 2012; Kepka, Ding, Bodson, Warner, & Mooney, 2015; Ramirez, Jessop, Leader, & Crespo, 2014). Other barriers identified, specifically among Hispanic parents in rural settings, included inflexible employment or complete lack of time off from work, language barriers, long wait times at clinics, navigating Medicaid, and lack of vaccine supply (Vamos et al., 2018).

Theoretical framework

The Theory of Planned Behavior (TPB) provides a framework that allows researchers to understand the beliefs and reasons of individuals or groups for performing a certain behavior and has been used in the past to specifically study health-promoting behaviors, including vaccination (Ajzen, 1991). The TPB assumes that individuals are rational and process information that motivates them to perform a behavior (Fishbein & Ajzen, 2010). The TPB

also assumes that the best predictor of actual behavior is an individual's intention to perform that behavior (Fishbein & Ajzen, 2010). According to the TPB, there are several factors that influence parental decisions: a) background factors including demographic, relational, and informational factors; b) attitudes towards the behavior, which describe an individual's beliefs about a behavior and its consequences; c) perceived norms, which account for the perceived social pressure from other individuals; d) perceived behavioral control, which describes the facilitators, barriers, and self-efficacy in performing a behavior; e) intention, which describes an individual's motivation; f) actual control, which describes external factors or skills that may facilitate or deter performing a behavior; and g) behavior, which describes the performance of the health-promoting behavior of interest (Ajzen, 1991).

Studies using the TPB model to predict HPVV acceptability and uptake showed that HPVV awareness, HPVV knowledge, and child's health insurance status, as well as attitudes towards the behavior, were influential factors in Hispanic parents' decision making (Aragones, Bruno, Tonda-Salcedo, & Gany, 2015; Roncancio et al., 2017; Stevens, Caughy, Lee, Bishop, & Tiro, 2013). Hispanic parent background factors that resulted in no association with HPVV uptake include parental age, marital status, household income, acculturation, education, and country of origin (Aragones et al., 2015; Kepka, Warner, Kinney, Spigarelli, & Mooney, 2015; Morales-Campos & Parra-Medina, 2017). However, other TPB constructs such as perceived behavioral control, background factors (e.g. language preference and employment status) and perceived subjective norms have resulted in inconsistent or contradictory conclusions or proved to be too complex to study quantitatively, leaving several factors warranting further investigation (Aragones et al., 2016; Chando, Tiro, Harris, Kobrin, & Breen, 2013; Morales-Campos & Parra-Medina, 2017).

To address these gaps, this study uses a qualitative approach guided by the TPB to investigate the salient factors for Hispanic parents in rural communities when deciding to vaccinate their children against HPV and determine which of those factors are most relevant for designing an HPV prevention intervention for Hispanics in rural communities.

Methods

Study design

This study used the qualitative data collected for the SEPA [Salud/ Health, Educacion/ Education, Prevention/Prevencion, and Autocuidado/Self-care] Men and Women (SEPA-MW) study. SEPA-MW is a mixed-methods study aiming to assess the feasibility and acceptability of a human immunodeficiency virus and sexually transmitted infections (HIV-STI) prevention intervention among Hispanic men and women in South Florida. The current study used a qualitative descriptive design. It allowed the researchers to investigate the aims using a naturalistic approach with little need for interpretation and to formulate a description of an understudied phenomenon among an understudied population (Creswell & Poth, 2018).

Setting and participants

For this study, we defined rural as a small town, agricultural landscapes, and isolation (Hart, Larson, & Lishner, 2005). The research team conducted this study in a rural, mostly Hispanic, community in South Florida. This rural agricultural community consists mostly of farmland filled with row crops of tropical fruit trees, nurseries, and packing warehouses (City of Homestead, 2018). It is also surrounded by two large national parks, each less than 10 miles away from the city center (City of Homestead, 2018). Participants were recruited from this rural community and smaller neighboring communities within a 5 mile radius. These rural communities have a poverty level ranging from 24.6% to 38.3%, and 23% to 28.9% of people under 65 do not have health insurance, all of which are higher than the average state percentages (13.6% poverty and 16% uninsured) (US Census Bureau, 2019).

A local health department provides family planning services to the community, while one free clinic and mobile clinic provide primary health care and immunization services, including the HPVV (Baptist Health South Florida, 2020; Florida Health, 2020; University of Miami Health System, 2020). Inclusion criteria were: self-identifying as Hispanic, between the ages of 18–50 years old, self-identifying as a parent, speaking and reading in English or Spanish, and being able to provide informed consent. Researchers conducted four focus groups with Hispanic parents in a private room provided by a non-for-profit community organization.

Data collection

This current study obtained approval from the Institutional Review Board at the University of Miami School of Nursing and Health Studies. Participants signed informed consent, and a copy was given to them. The researchers recruited participants, using English and Spanish flyers, from community centers, supermarkets, churches, and laundromats. After determining their eligibility, parents were invited to participate in the focus groups.

The lead investigators of SEPA-MW created a semi-structured interview based on the TPB constructs and literature review (Ajzen, 1991) (Table 1). The research team conducted four focus groups, three in Spanish and one in English, based on participant’s preference. Saturation was determined when no new data emerged from the focus groups and was achieved with a total of 23 participants (Creswell & Poth, 2018). Focus groups lasted between 60 and 90 min, and at the end of each focus group, the facilitator answered questions and reviewed with the participants an educational HPVV fact sheet from the CDC (CDC, 2018d).

Data analysis

Focus group recordings were transcribed verbatim in the original language, English or Spanish. Three bilingual researchers analyzed the transcripts in the original language of the focus group using directed content analysis (Elo & Kyngas, 2007). Researchers use this type of analysis when they wish to test constructs, models, or hypotheses (Marshall & Rossman, 2016). The research team conducted the analysis of the transcripts manually using a codebook and code sheet that were developed using constructs of the TPB as the overarching themes (Elo & Kyngas, 2007). Researchers independently identified codes by analyzing the

transcripts line by line to later group similar codes into subthemes under the pre-determined themes of the TPB (Elo & Kyngas, 2007). Upon completion, the research team compared the results and discussed the sub-themes and quotations until reaching consensus (Creswell & Poth, 2018).

The following elements address the steps taken to ensure qualitative rigor. Dependability: the researchers maintained documentation of the analysis via an audit trail consisting of raw data such as direct quotes from the transcripts, drafts of the sub-themes created during the analysis process, a codebook, and a code sheet (Creswell & Poth, 2018); Confirmability: triangulation was used by comparing the different views that participants reported across the focus groups, using field notes to add meaning to the findings, comparing findings to the constructs of the TPB which allowed the researchers to assess the data through yet another perspective, and using multiple researchers to check the accuracy of the analysis (Patton, 1999); Credibility: three researchers independently coded the transcripts first and then reviewed the findings together (Guba & Lincoln, 1994); Transferability: the description of participant demographics provided will facilitate comparisons with other groups of individuals (Colorafi & Evans, 2016).

Findings

Demographics

Participants consisted of 18 Hispanic mothers and 5 Hispanic fathers between 22 and 49 years old, with annual household incomes between $8400 and $48,000. The mothers, all foreign-born, preferred to speak Spanish, while the fathers, all US-born, preferred to speak English. The top three countries of origin for this sample were Mexico (n = 9), the US (n = 5), and Guatemala (n = 4). Foreign-born parents had been living in the US for an average of 14.5 years. Most parents were Christian (86.9%) and had two to three children covered by Medicaid with an average age of 9.34 years (Table 2).

The current study identified all seven constructs from the TPB as being salient themes for the participants when deciding to vaccinate their children against HPV: Background Factors; Attitude Towards the Behavior; Perceived Norm; Perceived Behavioral Control; Actual Control; Intention; Behavior (Table 3).

Background factors

Several background factors were identified as having an influence on Hispanic parents considering the HPVV for their children, including parental gender, religion, HPVV awareness, HPVV knowledge, culture, emotion, perceived risk, and past experiences.

Gender

All parents agreed that mothers are the primary decision-makers when it comes to a child's health. As one father stated, "…I think the mom convinces the dad because usually, I don't know, I'm always working so I don't usually take my son to the doctor or anything like that." Also, although the fathers trusted their child's mother to make the health decisions, they still wanted to be consulted or at least told about it. One father said, "I do, I trust her

and she tells me whatever happens… But like to not, to make a decision and not telling me then that's [an issue]."

Religion

Parents agreed that churches would be against openly discussing the HPVV, believing it would encourage the youth to engage in sexual acts. One parent stated, "They gave me the vaccine, now I can have sex or you know confuse it and engage in debauchery, and have sex because I won't get that disease…and I don't think that [the church] will put pamphlets regarding that." Nevertheless, parents believed that giving out informational pamphlets outside of a church was acceptable.

HPVV Awareness

Twelve parents said they were aware of the HPVV prior to participating in the study; however, only six of these parents had already vaccinated their children against HPV. Parents who were aware had heard of the HPVV via informational sessions known as "charlas", radio shows, television ads, internet videos, web pages, word of mouth, their child, their relatives from other countries, flyers given at schools, pamphlets given by HCPs, or community health fairs. Parents who were unaware of the HPVV prior to participating in this study had not vaccinated their children, with one parent stating that the HCP had never told them about the HPVV, "No, they had not informed me either, I did not put it to my daughters. No, they never told me about that injection, never." However, an increased interest regarding the vaccine was noted during their participation in the study and several mothers asked if they themselves could get the HPVV.

HPVV Knowledge

Knowledge of the HPVV ranged from the majority not knowing anything to a few being quite knowledgable about its purpose and age and gender eligibility. One parent stated, "What I learned, from the little that I remember, is that males can also be vaccinated. I think it's for adolescents that can get it". Although some parents struggled to recall everything they had learned from HCPs, they were able to recall enough details for others in their groups to learn about the HPVV. One parent even knew about the sex-myth surrounding the HPVV saying, "Sometimes due to myths. it's like thinking that you are giving them, sorry, the permission to be active. But seeing it clearly after one goes through a bad experience, it is better to prevent." Additionally, parents believed that being knowledgeable about the HPVV would have a positive influence on parents' decision to vaccinate their children, "If the person knows and stuff, someone who is always involved in the care of their children will put [the vaccine], because something that can prevent a contagion or a disease, the majority of the mothers do it always."

Culture

As mentioned above, participants stated that there may still be Hispanic parents who believe in the sex-myth associated with the HPVV and therefore consider the vaccine to be taboo, "…because of a taboo… a fear or lack of confidence to talk with the children. Then everything that is sexual, it like scares you to put it like this,. cover, to cover up the topic and

not talk." The TGRs, *marianismo* and *machismo,* also influenced participants' perceptions and behaviors regarding the HPVV. For example, one mother explained, ". if the father is very *machista* he does not like to speak about it, if the mother does not obey the father, [rather] she will not do it because the father will get upset."

Regardless of the taboos and TGRs, several participants agreed that Hispanic parents today are becoming more open-minded than parents were in the past, "today's relationships with the children are much better than in the past. At least before not even crazy one dared to ask [about sexual topics] to one's mother out of shame, out of respect, out of whatever." Across all focus groups, parents believed it was their responsibility to openly discuss sexually-related topics with their children so that their children could be informed of dangers and protect themselves against STIs.

Parents in this study also stated that Hispanics see HCPs as authoritative individuals that must be respected yet also expect HCPs to take on a paternalistic role when it comes to ensuring children are up to date on their vaccines, "I think that it would be a little more responsibility on the doctor's part or the doctor's office … I think that it would all be responsibility on the medical part, for one to follow the [vaccine] regimen".

Emotion

Fear was the most commonly shared emotion that prevented parents from vaccinating their children against HPV. Fear of the unknown kept one mother from vaccinating her child against HPV. Another mother dreaded discussing the HPVV with her daughter, "I was scared because it was all day 'oh no and I have a conversation pending'.because I did not know whether to explain everything to her or tell her I do not know what."

Perceived risk

Parents agreed that as their children aged and became more independent they would not be able to control their children's actions or what their children would be exposed to, especially outside of the home, "I think sometimes that, like maybe many people think 'oh my daughter or son is not going to do that' because sometimes in the house it's different, but when they're in school it's totally different." Parents were capable of understanding that both boys and girls have similar chances of acquiring and spreading any disease, including HPV.

Past experiences

Vaccinating the eldest child against HPV first influenced parents' decision to vaccinate their younger children. Parents who had an uneventful experience with the vaccination of their eldest child were more likely to also vaccinate the younger ones. However, one mother who had a negative experience with her oldest daughter was hesitant to vaccinate her younger ones and stated that she told the child's health care provider, "No, give me time to think because the other one throws it in my face that because of me, for having put that vaccine to her, she cannot get pregnant."

Attitude towards the behavior

Hispanic parents expressed positive and negative attitudes towards the HPVV for their children.

Positive attitudes

Positive attitudes included peace of mind, prevention over suffering the disease and its sequelae, and belief that improvements of science should be taken advantage of. One parent said, “Well, we do not know that it will protect 100% but at least uh, security to feel calmer because one is not always with the children.”

Negative attitudes

On the other hand, negative attitudes mentioned surrounded concern about potential side effects,“but already the human papilloma vaccine, there are girls or teenagers who end up in wheelchairs, they cannot move the spine, they are very strong effects, they definitely end up in a wheelchair, there are others that don’t”. In addition, a few parents had not grasped the preventative purpose of the HPVV and felt that the vaccine was unnecessary, especially for children not yet sexually active.

Perceived norm

Several sub-themes under this construct were identified, including perceived social pressure from HCPs, perceived social pressure from acquaintances, no perceived social pressure, and family as referents.

Perceived social pressure from HCPs

Parents considered HCPs to be the most influential individuals when deciding about vaccinating their children against HPV. Parents said that they felt more trusting of HCPs they had known for some time and that took the time to explain things to them. Many parents who had previously vaccinated their children against HPV reported that nurses or other HCPs had educated them or provided them with informational sheets on the vaccine,

> I know that the nurse told me quickly, the [health care provider] or the nurse, told me that there is now that vaccine for teenagers, for a certain age of 26 years … the nurse told me that my daughter was already at the age of getting the vaccine.

Parents also stated that HCP interventions, such as reminder phone calls for upcoming appointments, would help increase vaccination rates. In contrast, HCPs were believed to be unsuccessful in promoting the HPVV when they failed to have any type of reminder services or failed to educate parents on or recommend the HPVV.

Perceived social pressure from acquaintances

Participants shared past experiences from relatives or acquaintances regarding HPV and the HPVV that had influenced their own decision. One mother said,

> … seeing it after one goes through a bad experience well, it is better to prevent… to have a family member who has dealt with cancer… not [related to HPV] but in any case, one is left with the expectation that it is better to prevent.

However, parents who had heard of negative experiences involving the HPVV were now more afraid to vaccinate their children. For example, one father was hesitant to vaccinate his children against HPV after hearing from another participant who said that her oldest daughter was unable to get pregnant after receiving the HPVV.

No perceived social pressure

In accordance with the TGR of a woman in the Hispanic culture, four mothers stated that they did not rely on anyone's opinions when making decisions for their children's health, including the HPVV, "I've always been the one who decided, no I, with the things of the children almost always I'm the one who decides."

Family as referents

Several participants valued the opinion of and felt it necessary to include their child's other parent in all decisions regarding their child's health, including the HPVV. One father stated, "Well, both right. I mean at the end of the day there's nothing she can really do without me saying yes. I mean or without her saying yes." Children's opinions were also valued. Parents believed that because the child was the one getting the vaccine that they should also be included in the decision, "…it is their life, they also have to give an opinion." Another participant shared her experience saying, "…they explained [the HPVV] to my daughter and everything and I asked my daughter and she told me it was fine."

Perceived behavioral control

Several facilitators and barriers were identified to influence Hispanic parents considering the HPVV for their children.

Facilitators

Parents suggested that bundling the HPVV with other child vaccines while providing more education would facilitate the uptake of the HPVV. Participants also felt that more Hispanic parents would vaccinate their children against HPV if schools offered to administer the vaccine, "It is good for some parents, for example, who work and cannot take them to the clinics." Other facilitators mentioned included willingness to pay for the HPVV if necessary and convenient and accessible clinics or mobile clinics.

Barriers

In contrast, lack of HPVV awareness and knowledge, lack of HCP recommendation, and concern about potential side effects were the most frequently mentioned barriers to HPVV uptake. Additional barriers mentioned include clinic hours conflicting with work hours, lack of transportation, lack of trust in HCPs, and fear of pain from the injection. One father explained that his child screams a lot while getting vaccines therefore, "…when it comes to the shots [my wife] is cool and I cry so you know, I don't like shots for the kids".

Actual control

Lack of supply—One vital environmental factor that prevented a mother from vaccinating her daughter was the lack of HPVV supply at the clinic,

> … my daughter turned 13 but I spoke with the [health care provider] and told them that I wanted them to give it to her. But they told me that they did not have it at that moment, that later when I took her to another appointment if they had it they would give it to her.

Intention

Most of the participants who had not yet vaccinated their children against HPV indicated their intention to do so in the future. In contrast, one mother stated, “I’m not sure about putting her, of wanting to give her the vaccine … the truth is, I have reached a point where I have stopped believing in doctors, I don’t have as much faith in them as before.” This mother did not want to share what led to such distrust.

Behavior

Many parents in this study had not yet vaccinated their children against HPV as they were hearing about it for the first time. All the parents reported having at least one child between 9 and 26 years old, eligible to get the HPVV. However, only six out of the 18 mothers in the study reported initiating the HPVV series for their children. Four of the five fathers reported not knowing if their children had received the HPVV. One father explained, “Well I have a girl who is going to turn 10, but she lives with her mother, so I do not know if the mother already, you know, took the decision to vaccinate her.” The fifth father indicated that he was sure his child had not yet been vaccinated against HPV.

Discussion

Although few in number, there are studies supporting the use of the TPB for predicting HPVV uptake among Hispanics (Aragones et al., 2016; Kornfeld, Byrne, Vanderpool, Shin, & Kobetz, 2013; Roncancio et al., 2016). In addition, there are only a handful of interventional studies for increasing HPVV uptake among Hispanics and even fewer which use the TPB, are validated, or culturally tailored (Brueggmann et al., 2016; Kepka, Warner, et al., 2015; Krawczyk et al., 2012). Therefore, it is important to integrate and translate the findings of this study into an HPV intervention aimed at increasing HPVV uptake for Hispanics who are disproportionately affected by HPV-related cancers, particularly Hispanics living in rural communities.

Background factors

Gender—In this study, mothers were identified as the main decision-makers in regard to their children’s health. Even though parents wanted to include the child and/or the child’s other parent in the decision-making process, according to participants, the mothers would still make the ultimate decision. This finding was also identified in another study of rural Hispanic parents (Vamos et al., 2018). Even though fathers participated in this study, few were aware of their child’s HPV vaccine status. This ties in with the Hispanic TGR’s; in a machista culture, men are not expected to become involved in parenting as it is considered to be a woman’s task (Deyoung & Zigler, 1994).

Religion—Although the majority of Hispanic parents in this study were Christian, when asked about religion and its role in their decision-making regarding the HPVV, parents quickly dismissed the question only saying that churches would not allow the discussion of such a topic. Even though religion is important for Hispanics and they know that their religion will not support initiatives related to HPV prevention, this did not seem to influence their decision regarding vaccinating their children against HPV. In another study, where parents were recruited from a women's clinic in a large urban city, authors reported the same finding (Brueggmann et al., 2016).

HPVV awareness—About half of the participants in this study were aware of the HPVV (Kepka, Ding, et al., 2015; Lechuga, Vera-Cala, & Martinez-Donate, 2016). However, very few who were aware of the HPVV had initiated the series for their children; thus, HPVV awareness alone did not seem to strongly influence participants' decision to vaccinate (Morales-Campos & Parra-Medina, 2017; Warner et al., 2015). This finding has also been reported for Hispanics in other US rural communities (Kepka, Coronado, et al., 2012; Luque et al., 2012; Vamos et al., 2018).

HPVV knowledge—Even fewer participants were knowledgeable about the HPVV in detail. Parents with no prior knowledge of the HPVV formed their beliefs and perceptions based on what they learned about it from their more knowledgeable peers. These parents were positively open to protecting their children against cancer but were also vulnerable to becoming fearful of the potential vaccine side effects that were brought up by other parents. Additionally, these participants brought to light an important point which is that HCPs in the area may not be educating parents or promoting the HPVV enough leading to a general lack of information in the community. Some parents with age eligible children stated that their child's HCP never mentioned the vaccine to them and so they did not know about it. However, after educating participants about HPV and its associated cancers, the HPVV's effectiveness, actual side effects, and dispelling their misconceptions, many agreed that if Hispanic parents in their community were knowledgeable about the HPVV and its benefits, they would vaccinate their children (Brueggmann et al., 2016; Kepka, Coronado, et al., 2012; Stevens et al., 2013).

Culture—Parents in this study brought up cultural and social norms that were influential in their decision to vaccinate their children against HPV, such as the negative aspects of the TGR's. Examples throughout the literature demonstrate the negative influence thatTGRs have on Hispanic parents' decision to vaccinate their children against HPV, such as the mother not intending to vaccinate her child if she believed the father would be against it; however, the terms "marianismo" and "machismo" were never directly mentioned to describe these examples (Ramirez et al., 2014; Warner et al., 2015). On another note, the majority of Hispanic parents in this study did not believe that vaccinating their children against HPV would cause them to engage in sexual behaviors. Instead, they recognized that this belief is a myth created by sexual taboos. This finding was also reported by Hispanic parents in other US rural communities (Kepka, Ulrich, & Coronado, 2012; Vamos et al., 2018).

Emotion—One barrier to HPV vaccination identified in this study is parents' fear of not knowing what or how to communicate with their children about sex-related topics. This is a common finding among Hispanics living in urban cities as well (Clevenger, Dreisbach, Scandlyn, & Brett, 2012; Ramirez et al., 2014; Warner et al., 2015). However, participants in these studies, including this study, stated that they have begun to understand the value of open communication on such topics (Aragones et al., 2016). In this study, parents' willingness to be more open about sex-related health topics, including the HPVV, could be due to the acculturation of the foreign-born Hispanic parents, who have lived in the U.S. for an average of 14.5 years (Gerend, Zapata, & Reyes, 2013). Regardless, previous studies have reported no significant association between the number of years Hispanic parents have lived in the US and HPVV uptake for their children (Aragones et al., 2015; Gerend et al., 2013).

Perceived risk—Although most parents perceived and understood the real risk of their children acquiring HPV, a few parents did not perceive that risk, stating that the HPVV was unnecessary because their child was not yet sexually active (Kornfeld et al., 2013; Warner et al., 2015). Believing the HPVV to be unnecessary has been significantly associated with a decrease in HPV vaccination among Hispanics (Kepka, Ding, et al., 2015).

Past experiences—Several parents in this study spoke of past experiences that either positively or negatively influenced their HPVV perceptions. Furthermore, participants explicitly expressed wanting to hear about other parents' experiences with the HPVV prior to vaccinating their children which was also reported by Hispanic parents living in urban settings (Lechuga et al., 2016; Ramirez et al., 2014).

Attitudes towards behavior

Positive attitudes—Parents in the current study who had already vaccinated their children felt calm and secure because they were able to protect their children against HPV and its associated cancers (Roncancio et al., 2016). A few parents also felt is what better to prevent a contagion or cancer than to regret it, which has also been reported by Hispanic parents in other US rural settings (Vamos et al., 2018).

Negative attitudes—Some parents in this study expressed concern about the possible side effects of the HPVV which is a common finding even among Hispanic parents in urban cities (Aragones et al., 2016; Warner et al., 2015). In addition, parents in this study expressed that after hearing negative experiences from other family members or acquaintances about the HPVV, they became more concerned about the vaccine and decided to postpone vaccination until they knew more about it (Yeganeh, Curtis, & Kuo, 2010). A lack of culturally tailored HPVV educational material could explain why concern about side effects and lack of knowledge are still barriers to HPVV uptake among Hispanics. After educating parents about HPV and the HPVV at the end of each focus group and addressing their concerns, the majority reported intentions to vaccinate their children in the future.

Perceived norm

Perceived social pressure from HCPs—HCPs were considered the most influential individuals in parents' decisions regarding HPV vaccination. HCP recommendation has

previously been significantly associated with predicting HPVV uptake among Hispanics (Lechuga et al., 2016; Roncancio, Ward, Carmack, Munoz, & Cribbs, 2017; Yeganeh et al., 2010). However, in addition to HCPs being comfortable with speaking about HPVV to parents (McCave, 2010), there are several social norms that HCPs must embrace in order to gain Hispanic clients' trust and compliance. These social norms include *personalismo, simpatia, confianza,* and *respeto* (Garcia, Zuniga, & Lagon, 2017). *Personalismo* indicates a preference for close relationships with HCPs. *Simpatia* indicates a preference for no criticisms from the HCP. *Confianza* refers to the preference for a HCP that they can trust. Lastly, *Respeto* indicates the view of HCPs as authority figures who are respected due to their socioeconomic position (Garcia et al., 2017).

In accordance with the aforementioned norms, parents in this study trusted HCPs who explained procedures, performed in-depth care, and answered client questions. Furthermore, HCPs were seen as authority figures to be respected and fully or equally responsible for their children's health. According to parents, HCPs and/or clinics were expected to implement appointment reminders for upcoming visits and pending vaccine doses (Vamos et al., 2018). These reminders have been previously associated with significant increases in HPVV completion rates among Hispanics in urban cities (Aragones et al., 2015; Morales-Campos & Parra-Medina, 2017; Roncancio, Ward, Carmack, Munoz, Cano, & Cribbs, 2017).

Perceived social pressure from acquaintances—Several parents in this study, shared stories from their acquaintances or family members and how these stories influenced their perceptions of HPV, cancer, and the HPVV. When asked what could help increase HPV vaccination, participants explicitly stated that they wanted to hear about other parents' experiences with the HPVV before making their decision (Lechuga, Vera-Cala, & Martinez-Donate, 2014; Ramirez et al., 2014).

No perceived social pressure—As previously mentioned, in accordance with the TGR of women in the Hispanic culture, four mothers stated that they did not take into consideration anyone else's opinion for making the health related decisions for their children and simply relied on their own knowledge to do what they believed was correct (Vamos et al., 2018).

Family as referent—In line with Hispanic's collectivistic values, parents in this study also believed that the opinion of children who were old enough to understand was important when making the decision to get the HPVV and thought it would be easier if a professional was present to help them explain it to the child. Furthermore, Hispanic adolescents and young adults have previously expressed the desire to be included in the decision to get the HPVV, while others have reported getting the HPVV particularly because their mother supported it and recommended it to them (Morales-Campos, Markham, Peskin, & Fernandez, 2012; Stephens & Thomas, 2014). Another study using the TPB also found a correlation between approval from significant others for the HPVV and HPVV uptake (Krawczyk et al., 2012).

Perceived behavioral control

Facilitators—Parents believed that bundling the HPVV with other child vaccines would facilitate the uptake of the HPVV (Aragones et al., 2016). Bundling the HPVV in addition to a strong HCP recommendation has shown promising results for increasing HPVV uptake among Hispanics, Spanish speakers, and individuals with lower incomes (Farmar et al., 2016). Hispanic parents in this study also stated that convenient and accessible clinics or mobile clinics would help increase HPV vaccination rates in their communities.

Barriers—Parents reported that they were working long hours and could not make it to the clinics on time and that those without transportation needed other options. These findings were also reported in another study among Hispanic parents living in a rural and agricultural community in Central Florida (Vamos et al., 2018). Results from a systematic review have indicated that mobile clinics are effective in removing the above-mentioned barriers, particularly for Hispanics in rural farmworking communities (Luque & Castaneda, 2013).

Actual control

Lack of supply—One participant in this study was unable to vaccinate her child because the clinic did not have the HPVV in stock which has been previously reported by other Hispanic parents in both rural and urban cities (Vamos et al., 2018; Yeganeh et al., 2010). This is a modifiable environmental factor, as several programs exist that provide clinics with reduced cost or free HPVVs for lower-income populations (Clevenger et al., 2012). One such program is the Vaccine for Children (VFC), which supplies HCPs with free HPVVs to administer at no cost to patients who are younger than 18, uninsured, Medicaid-eligible, or American Indian/Alaska Native (CDC, 2016b).

Intention and behavior

Few parents in this study vaccinated their children against HPV; this result has been reported in other studies conducted among Hispanics in rural areas (Chando et al., 2013; Kepka, Ding, et al., 2015; Kepka, Warner, et al., 2015). However, in this study, an increase in intention to vaccinate their children against HPV was noted after the focus group facilitator educated and motivated participants at the end of each session (Aragones et al., 2016). This is an encouraging finding, as the intention to perform a behavior, according to the TPB, is the best indicator for the actual performance of that behavior (Ajzen, 1991).

Clinical implications

To maximize HPV vaccination access in rural agricultural communities, where many work 12 h shifts in the fields and packing warehouses, state and government agencies could allocate funds to increase the number of HPVV's available, as well as, to increase the number of accessible rural clinics or mobile clinics that operate after regular clinic hours and on weekends. School nurses could offer and administer the HPVV to age eligible children after getting parental consent and the HPVV can also be offered and administered in community health fairs that most Hispanic parents attend with their children.

Pediatric nurses, who are specially trained to work with children of all ages, should also make sure to use age-appropriate words when explaining the HPVV to the child, which could help increase vaccine uptake among their collectivistic Hispanic families. Furthermore nurses should include testimonials of positive experiences with the HPVV when promoting it to Hispanic parents and children. Pediatric nurses and HCPs in general, should guide and equip Hispanic parents with the necessary skills to have sex-related discussions with their children, as well as, ensure that parents understand the high prevalence of HPV, the direct relationship between HPV, cervical, penile, anal, and other related cancers, and that the vaccine is safe and effective to use in children who are not sexually active. Additionally, educational programs guided by the TPB and tailored to meet the needs of Hispanic parents in rural communities, can be used to prevent HPV and increase HPVV uptake.

Furthermore, pediatric nurses can take the initiative and bundle the administration of the HPVV with other age-appropriate vaccines and create and utilize effective reminder systems for appointments to help increase HPV vaccine initiation and completion rates among Hispanic youth. Most importantly, since HCP recommendation has been correlated with HPVV uptake, pediatric nurses must not only provide strong positive recommendations for the promotion of the HPVV to Hispanic parents but must do so at every visit and opportunity.

Limitations

A limitation of this study is the overrepresentation of Hispanic mothers versus Hispanic fathers. In the Hispanic culture, the man’s role does not include childcare rather supporting the family financially, while childrearing is typically the woman’s responsibility (Deyoung & Zigler, 1994). While men were invited to participate in the focus groups, it was difficult to schedule them to participate. They identified issues related to their workload as the constraining factor, even though we offered multiple time options for their participation. Future research projects should address Hispanic father’s underrepresentation in this study.

Conclusion

Findings from this study give insight into the numerous influential and salient factors that Hispanic parents in a rural setting consider when deciding to vaccinate their children against HPV. These findings, as well as, the perceptions of the Hispanic fathers included in this study, which are especially scarce within the literature, add new and rich descriptive information to the limited existing literature.

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Table 1

Interview questions.

TPB constructs	Questions
A) Background Factors	What do you know about the Human Papillomavirus vaccine? How did you hear about the vaccine? Does religion play any role in regards to parents vaccinating their children against the Human papillomavirus? How about the role of the father versus mother?
B) Attitude towards the behavior	What do you think about the vaccine? How does the idea of vaccinating your child against the Human Papillomavirus make you feel?
C) Perceived Norm	Whose opinion would or did influence your decision to vaccinate your children against the Human Papillomavirus? What about health care providers' opinion? What about family members or acquaintances' opinion?
D) Perceived Behavioral Control	Do you feel you can vaccinate your children against the Human Papillomavirus, why or why not? What barriers to human papillomavirus vaccination do you identify for Hispanic parents in your communities? What would facilitate/help Hispanic parents initiate the vaccine for their child? What would facilitate/help Hispanic parents complete the 2 or 3 dose series for their child?
E) Actual Control	What environmental or external factors, things that are out of one's control, might Hispanic parents in this community encounter that may prevent them from vaccinating their child against the Human Papillomavirus?
F) Intention	Do you intend to vaccinate your children against the Human Papillomavirus in the near future? For those who had started the vaccine for your children, do you intend to complete the series?
G) Behavior	How many of you have vaccinated your children with at least one dose of the vaccine? Why or why not?

Table 2

Demographic characteristics of the sample ($N = 21$).

Demographic characteristic	M	SD	N	%
Parents				
Age (Range: 22–49)	35.83	5.93		
Years living in the US	14.50	2.93		
Gender				
Mother			18	78.3
Father			5	21.7
Annual Income				
<$18,000			11	47.8
≥$18,000			12	52.2
Relationship status				
Married			11	47.8
Single			3	13.0
In a relationship, not legally married			8	34.8
Divorced			1	4.3
Living with partner				
Yes			20	87.0
No			2	8.7
No. of children				
1			2	8.7
2			7	30.4
3			7	30.4
4			4	17.4
5 or more			3	13.1
Preferred language				
Spanish			18	78.3
English			5	21.7
Country of origin				
US			5	21.7
Guatemala			4	17.4
Honduras			1	4.3
Mexico			9	39.1
Nicaragua			1	4.3
Colombia			2	8.7
Cuba			1	4.3
Years of education				
≤HS			16	69.6
>HS			7	30.4
Health insurance status				
Insured			5	21.7

Demographic characteristic	M	SD	N	%
Uninsured			18	78.3
Employment status				
Employed			4	17.4
Unemployed			19	82.6
Children				
Age(Range: 9mo. - 20 years old; Median: 10 years old)	9.34	4.84		
Gender				
Daughter			43	64.2
Son			24	35.8
Health insurance status				
Insured (Medicaid)			22	95.7
Uninsured			1	4.3

Note. Years living in the US was calculated excluding the five participants who were born in the US.

Table 3

Salient TPB themes among Hispanic parents for HPV vaccination.

Themes	Sub-themes
Background factors (Demographic, relational, and informational factors)	a. Gender
	b. Religion
	c. HPVV Awareness
	d. HPVV Knowledge
	e. Culture
	f. Emotion
	g. Perceived risk
	h. Past experiences
Attitudes towards the behavior (Individual's beliefs about a behavior and its consequences)	a. Positive
	b. Negative
Perceived norm (Perceived social pressure from other individuals)	a. Perceived social pressure
	b. Perceived social pressure from acquaintances
	c. No perceived social pressure
	d. Family as referents
Perceived behavioral control (Facilitators, barriers, and self-efficacy in doing a behavior)	a. Facilitators
	b. Barriers
Actual control (External factors or skills that may facilitate or deter doing a behavior)	a. Lack of supply
Intention (An individual's motivation to do a behavior)	
Behavior (The performance of the health-promoting behavior)	

TPB = Theory of Planned Behavior; HPVV = Human Papillomavirus Vaccine; HCP = Health care provider's.