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Attitudes Toward HPV Vaccination Among Low-Income and Minority Parents of Sons: A Qualitative Analysis

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Abstract

Objective. To characterize the attitudes of low-income and minority parents/guardians toward vaccinating sons against human papillomavirus (HPV). *Methods*. In 2010-2011, we conducted qualitative interviews with 68 black, 24 white, and 28 Latino parents/guardians of sons. We identified attitudes related to HPV vaccination, vaccine mandates for males and females, and adolescent male sexuality using constructs from the Health Belief Model and methods based in grounded theory. *Results*. Most participants were concerned that their sons could be exposed to HPV through sexual experimentation and believed that the consequences of HPV infection could be severe; thus, 75% would accept HPV vaccine for their sons. Yet the lack of efficacy and safety information specifically pertaining to males posed barriers. More black (73%) and Latino (86%) than white (44%) participants supported school-entry requirements for HPV vaccination. *Conclusions*. Low-income and minority parents/guardians were generally receptive toward vaccinating their sons against HPV; racial/ethnic differences emerged regarding school-entry mandates.

Keywords

HPV vaccination of males, parental attitudes, school mandates, low-income and minority, qualitative research, health belief model

Introduction

Human papillomavirus (HPV) vaccination has been recommended for females in the United States since 2006, but uptake remains below the rates necessary to produce the population-wide reductions in diseases that have been achieved in other countries.[1-3] HPV vaccines received permissive recommendations for males from the Advisory Committee on Immunization practices in 2009,[4] which was strengthened to a routine recommendation in 2011 in light of low uptake in women, increasing rates of HPV-related cancers in men, and new evidence of vaccine efficacy for cancer prevention in men.[5] Although studies both within and outside the United States have found that most parents of boys and health care providers support HPV vaccination in males,[6] only 2% of males received vaccination in the year following the publication of permissive recommendations in 2009.[7]

Prior to the availability of HPV vaccination for males in the United States, parental acceptance in hypothetical scenarios varied widely.[5] Some studies found higher parental acceptance for females than males,[5] and 1 report indicated higher vaccine acceptability for sons among Latina than non-Latina mothers.[8] Few studies examined parental attitudes after the HPV vaccine was approved for males, nor have the attitudes of low-income or minority parents been emphasized, though low-income and minority men have higher rates of oral

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Table 1. Demographic Information by Racial/Ethnic Category[a]

Variable	Total, n = 120	Black, n = 68	Caucasian, n = 24	Latino, n = 28	*P* Value, ANOVA
Age of parent, mean (SD)	43.5 (8.3)	45.2 (8.8)	43.3 (7.2)	39.8 (7.1)	<.01*
Age of son, mean (SD)	14.0 (2.3)	13.7 (2.4)	14.2 (2.5)	14.7 (2.2)	.15
	Total, n (%)	Black, n (%)	Caucasian, n (%)	Latino, n (%)	*P* Value χ^2 or Fisher's Exact
Gender of parent					.72
Male	24 (20)	12 (18)	6 (25)	6 (21)	
Female	96 (80)	56 (82)	18 (75)	22 (79)	
Marital status					.01
Single	36 (30)	24 (35)	6 (25)	6 (21)	
Married	51 (42.5)	28 (41)	13 (54)	10 (36)	
Divorced/Widowed	18 (15)	13 (19)	3 (13)	2 (14)	
Nonmarriage partnership	15 (12.5)	3 (4)	2 (8)	10 (36)	
Language					<.01
English	74 (62)	47 (69)	21 (88)	6 (21)	
Other	46 (38)	21 (31)	3 (13)	22 (79)	
Country of origin					<.01
United States	51(43)	24 (35)	20 (83)	7 (25)	
Other[b]	69 (58)	44 (65)	4 (17)	21 (75)	
Practice a religion	93(78)	58 (85)	12 (50)	23 (82)	<.01
Education					.09
Less than high school	22 (18)	10 (14)	2 (8)	10 (36)	
High school	38 (32)	23 (34)	9 (38)	6 (21)	
At least some college	59 (50)	34 (52)	13 (54)	12 (43)	

Abbreviation: SD, standard deviation.

[a]Racial/ethnic categories were determined based on patient self-report and represented categories consistent with large survey data sets and census data. The data in this table have been previously presented (Perkins et al[11]) and are repeated here to give background context to the qualitative analysis.

[b]Countries of origin included Afghanistan, Brazil, Cameroon, Cape Verde, Dominican Republic, Germany, Ghana, Haiti, Jamaica, Montserrat, Nigeria, Peru, Puerto Rico, Somalia, Saint Vincent, Uganda, and Ukraine.

HPV infection[9] and are more likely to suffer from HPV-related diseases, including penile, anal, and oral cancers.[10] This qualitative study, performed after permissive approval but prior to universal recommendations of HPV vaccination for males, aimed to provide an in-depth understanding of how low-income and minority parents view HPV vaccination for their sons using open-ended interview questions and qualitative analysis based on the constructs of the Health Belief Model.

Methods

We interviewed parents and legal guardians of boys aged 11 to 17 who accompanied their sons for preventive care or problem-related visits between December 2010 and December 2011. Participants were recruited from pediatric and adolescent practices in an urban academic medical center and a community health center that serve Boston's low-income, urban populations. Approximately 90% of pediatric patients at these health centers qualify for Medicaid or other publicly subsidized insurance. The patient population at the academic center is approximately 70% black (including both US-born African Americans as well as immigrants from Africa and the Caribbean), 15% Latino, and 15% white. The population at the community health center is approximately 80% Latino, with most patients coming from Central and South America; the other patients are predominantly white. Parents/guardians who spoke English, Spanish, or Haitian Creole were eligible for inclusion. Trained research assistants reviewed practice schedules to determine eligible patients and recruited parents/guardians in the waiting areas before scheduled visits. We sought a diverse sample of black (participants who self-identified as "black" in our study included African American, Haitian, and African), Caucasian, and Latino parents/legal guardians. Semistructured interviews were conducted in English, Spanish, or Haitian Creole by native speakers.

The sample is the same as that which provided quantitative findings previously reported.[11] Demographic characteristics are summarized in Table 1. Of 156 participants approached, 120 participated: 68 black, 24 white, and 28 Latino. The average age of parents/guardians and sons

were 43.5 and 14.0, respectively. Most respondents were mothers, had completed high school or some college, and practiced a religion. Approximately half were married. More than half of parents/guardians (58%) were immigrants, and nearly 40% spoke a primary language other than English.

Qualitative questions were developed on the basis of previous studies[12,13] and based on constructs of the Health Belief Model: perceived severity, perceived susceptibility, perceived benefits, and perceived barriers. We asked about opinions of HPV vaccines, vaccination mandates, and adolescent male sexuality. Roughly half of the participants had heard of either HPV or the HPV vaccine.[11] Thus, to allow individuals to participate meaningfully in the subsequent interview, all participants were read a short, educational paragraph* explaining HPV and HPV vaccination prior to answering questions related to HPV vaccination. Participants then answered questions, including "Can you think of reasons why parents might (might not) want to vaccinate adolescents against HPV?" "Would you feel more comfortable vaccinating a son or a daughter? Or does gender not matter?" "How do you feel about requiring children to get the HPV vaccine in order to go to school?" "If you think that the HPV vaccine should be required for school, should it be required for girls, boys, or everyone?" "At what age do you think boys should be vaccinated against HPV? Why did you choose this age? Would you choose a different age for girls?" All responses were probed to elicit detailed explanations of participants' reasoning and explore domains relevant to Health Belief Model constructs. Participants were also asked to explain, in their own words, their reasons for either intending to accept or decline HPV vaccination for their sons.

Questions were translated into Spanish or Creole and then backtranslated to ensure equivalent meanings. Interviews were audiorecorded and transcribed. Spanish/Creole data were transcribed in the language used, translated to English by 1 bilingual investigator, and then reviewed by a second bilingual investigator to ensure the adequacy of translation. Participants received $15 gift cards for participating. The Boston University Medical Center's institutional review board approved this study.

Qualitative data analysis was performed using methods based in grounded theory and content analysis.[14] Transcripts of interviews were closely read to identify meaningful content expressing parents'/guardians' attitudes toward vaccination and how they approached HPV vaccination for their sons as well as perceived susceptibility, perceived severity, perceived benefits, and perceived barriers that comprise relevant health beliefs.[15] Two investigators independently coded each transcript, codes were reviewed with the group, and areas of disagreement were resolved through discussion. Common themes, issues, and language use were noted and placed into broader coding categories based on similarity of content. The analysis included systematic comparisons within and between racial/ethnic groups to infer significant themes and describe meaningful variation.

Results

We found that most parents/guardians were concerned that their sons could be exposed to HPV through sexual experimentation, and they believed that the consequences of HPV infection could be severe. As such, most perceived more benefits than barriers to vaccinating against HPV, and 75% stated that they would accept HPV vaccine for their sons if offered by their physicians. The most important barrier to vaccination was lack of efficacy and safety information specifically related to males. Our systematic comparison by race/ethnicity revealed no differences in parents'/guardians' views toward vaccinating their own children, but minority participants were more likely than white participants to support school-entry requirements for HPV vaccination. Themes, codes, and illustrative quotes are discussed in detail below and listed in Table 2.

Positive Attitudes Toward HPV Vaccines for Sons: Perceived Susceptibility, Severity, and Benefits

Three-quarters of participants intended to accept HPV vaccines for their sons; no racial differences were noted. Many participants wished to vaccinate their sons to protect their health and for "very important reasons, for preventing cancer." Others felt that teenagers often experimented sexually without taking precautions, and saw HPV vaccination as a tool they could use to protect their children. As one Latina mother said, "You never

*The wording of the educational paragraph was as follows: "HPV is a virus. HPV is spread from one person to another by contact with the skin of the vagina or penis. People usually catch HPV from having sex, but they can catch it from touching someone else's genitals, even if they do not have sex. Condoms can decrease the chance that a person catches HPV, but they are not 100% effective. There is a vaccine to prevent HPV. HPV can't be cured with antibiotics because it is a virus. Sometimes after someone catches HPV, it never goes away. If this happens, it can cause problems. HPV can cause abnormal PAP smears, warts on the penis or vagina, and cancer of the cervix (uterus or womb), anus, and mouth.

Table 2. Themes From Qualitative Interviews With Illustrative Quotes From Parents[a]

Theme	Codes Presented in Order From Most to Least Frequently Mentioned by Parents
Positive attitudes toward HPV vaccines for sons: perceived susceptibility, severity, benefits[b]	Prevention/Protection • "It's a protection that can prevent the child from getting the illness. You know, children are a little crazy, especially when the child has a folly to have sex. The advantage is just to protect them so they don't get the illness." [Black] Extend parents' ability to protect their children against the consequences of poor sexual choices • "Well adolescent are more apt to experiment with things, and they're not going to tell their parents they're doing it, so you're taking precautions against it." [White] Early teen sexual activity • "Well nowadays, children are engaging in sexual activities younger, or just in general teenagers, so there's a lot of oral sex going on, I think at a younger age . . . 7th grade." [Latino] Vaccination is part of good parenting • "If we provide the necessary protection you know for our kids I think we are fulfilling our roles as parents." [Black] Vaccine as educational tool • "That it helps prevent it. And tell them that, or explain to them why the vaccine. Not only vaccinating them but also that they know why they're getting vaccinated." [Latino] Trust physician • "Almost always the pediatrician tells you what it is and what the vaccine is for. And it is a decision we parents make if you accept it or not. In my case, I almost always take the decision to say yes." [Latino]
Perceived barriers to HPV vaccination	No downside • "I don't see no reason why [not to vaccinate], to save a child's life, you know, from catching a disease." [Black] Lack of information • "They may not think that it works . . . or they're not aware, they're probably not aware this is out there for their children, especially for boys, I didn't know that it could be for boys." [Latino] Safety and efficacy concerns • "I mean maybe out of fear that it won't work or maybe have side effects[c] or something." [Latino] Promotes irresponsible sexual behavior • "Might prevent them from using a condom because they might think, 'Well I got the vaccine so I'm safe.'" [Black] Denial of child's sexual behavior/Unnecessary because of young age • "In denial of their child doing—having sex or touching." [Black] Culture of alternative medicine (antivaccine)/religion • "Some people don't believe in doctors. I know that some people don't believe in the Western, you know . . . they prefer traditional stuff. . . . The religion has to do with it, too. Sometimes they have the information, but they say, 'No, I'm sticking with my God.' Stuff like that." [Black]
Attitudes toward male sexuality	*Reasons to delay sexual activity* Parental influence/education • "It depends on the house they come from. If their family teaches them that they don't get sex until they get married and they believe that, they don't want to do that; it's right for them." Not ready/waiting for love/focused on life goals • "Some of them know that they are not, mentally, emotionally ready. Some know that they physically cannot handle it. You know, once you go there, you can't go back, so to speak. Some of these kids, they know, emotionally and mentally—'I can't handle that.' Some just have a high self-esteem where they're just like 'No. I wanna wait. I wanna wait till I'm an adult. I wanna wait a little longer. I wanna wait for someone special. I wanna wait till I'm out of college. I wanna wait until I'm at least in college. I wanna wait until I find that One.'" Religion • "Maybe they're saving themselves for, you know, their partners or just don't believe in having sex before marriage. And that depends also too on your religion." Fear of negative consequences • "Some children, they don't want to get pregnant. Girls and boys, they don't want to have someone pregnant."

(continued)

Table 2. (continued)

Theme	Codes Presented in Order From Most to Least Frequently Mentioned by Parents
	• "Definitely the disease out there, you know. The fear of getting infected with all these horrible diseases."
	Reasons to initiate sexual activity
	Sex is normal
	• "Sometimes it's also in the change of their bodies like they feel like they need to have . . . their desires of becoming a mature adult."
	Peer pressure/seeking love
	• "I think peer pressure's part of it. I feel that some of them want to feel wanted or you know, want to have that connection and think that this is the way to do it."
	Media influence
	• "They hear about it. You see it on the TV and in the movies all over the place, now. Sex, sex, sex, sex. You know, kids get curious and it's like, "Why not try it?"
Attitudes toward vaccinating boys and girls in early adolescence	Vaccinate well in advance of sexual debut
	• "[I would vaccinate in] pre-adolescence. . . . I think most kids become sexually active in adolescence, although then I think about kids who get sexually abused and so . . . but pre-adolescence, prior to, like 10. Prior to you know when most kids get sexually active in their teen years."
	Vaccinate as close as possible to the time of sexual debut
	• "I'm just thinking that [vaccination should happen at] the age when they start getting into puberty age, you know what I mean like, maybe sexually active."
Opinions on school-entry requirements for HPV vaccine[d]	*Reasons for supporting mandates*
	Prevention/Protection
	• "I think it's great. Add it in. Eventually, they are gonna have sex, so if we could prevent it early from them getting something. I think it's good." [White]
	Extend parents' ability to protect their children against the consequences of poor sexual choices
	• "Adolescents today they're sexually active even when you don't know. I'd rather be safe than sorry. . . . Even the goody-two-shoes ones slip up, make mistakes." [Black]
	Public health
	• "Personally I think it should be required. You know, again the ounce of prevention. If everyone is vaccinated against it eventually it goes away." [White]
	High perceived severity of HPV disease
	• "Children are kids are much more promiscuous today than they were 50 years ago, so I think that it would be appropriate for middle school aged children." [Black]
	Reasons for opposing mandates
	Personal choice
	• "I think that should be left up to the parents. Because it's mostly for teenagers, not for young children. And that should be something that a teenager should weigh in on a little bit." [White]
	Lack of information
	• "That's the one that I think is fairly new that I think is still. . . . I have my cautions about it." [Latino]
	Not contagious via casual contact
	• "I don't like that one because they are so young. I don't think they will get that type of virus because there are only so many ways to get it." [Black]
	Age dependent
	• "Kids these days are sexually active between the ages of curiosity 10, 11, 12, 13. So I mean at a certain age I feel that it should be required." [Latino]

Abbreviation: HPV, human papillomavirus.
[a]Although analyses sought racial differences, results are not separated by race because most parents of different races/ethnicities expressed similar views.
[b]More than 70% of parents placed equal importance on vaccinating males and females; the remainder were split between feeling that the vaccine was more important for males versus females.
[c]Side effects mentioned by parents included fever, autism, allergic reaction, intellectual disability, countereffect, neuromuscular disease, and irritability.
[d]All parents felt that HPV vaccines, if mandatory, should be mandatory for both boys and girls.

know what your children are up to. It is better to prevent so nothing can happen." Several participants saw no reason to decline vaccination, and others went as far as to equate vaccination with good parenting: "The only reason I can think of [not to vaccinate] is just being lazy or neglectful because I think they should!" Others felt that vaccinating them against HPV and explaining the risks of sexual activity might help them make better choices: "If they have to get a shot to prevent them from getting something sexually transmitted they might think twice about actually having sex." Participants also expressed faith that their physicians' recommendations for vaccination would benefit their children: "I respect [my doctor's] opinion and whatever way she would have went would have been the way I would have went. I feel she has his best interest and she knows what he needs too."

Perceived Barriers to HPV Vaccination

Although many participants saw no downside to vaccination, those who did most commonly cited a lack of information pertaining specifically to males: "Information needs to get out, especially for those parents that have male children. The females, at this point, if they don't have that information . . . [they] must've been under a rock." Other participants cited concerns related to efficacy and safety. Parents and guardians also mentioned concerns about promoting unsafe sexual behavior: "Like giving them permission . . . to have unsafe sex because this magic vaccination doesn't allow you to get warts." However, only 1 parent intended to decline vaccination for her son because of concerns related to sexuality, feeling that vaccination was unnecessary "because my son is not engaging in sexual activities." Some participants mentioned that religious beliefs or preferences for non-Western medicine might temper the interest of other parents, but they did not express such concerns themselves.

Attitudes Toward Male Sexuality

Many participants felt that adolescent males would delay sex if they were exposed to strong family values and education; had personal preferences, life goals, or religious values that made delaying sex important to them; or understood the potential negative consequences, including both sexually transmitted infections and unintended pregnancy. However, they also felt that peer pressure, lack of love in their homes, and media influences could promote sexual activity in teen boys: "Sometimes, the kids are looking for affection. . . . They believe sex is love. Sex is not love. I always tell my kids sex is not love." Interestingly, approximately one-third of participants considered sexual activity normal for adolescent boys after they had reached a certain maturity level: "When the person reaches an age, they feel a desire within themselves to do things and I don't think anyone can prevent it. It's a natural thing that happens."

Attitudes Toward Vaccinating Boys and Girls in Early Adolescence

Participants generally supported the recommended age range for HPV vaccination, believing that girls and boys should be vaccinated at a median age of 13 years (mean = 12.5; range = 4-18 years[†]). More than 70% of participants believed that both girls and boys should receive HPV vaccination at the same age, and the remaining participants were evenly split between favoring vaccinating girls before boys or vice versa. Those who favored vaccinating girls earlier believed that HPV disease was a greater threat to women and that girls were more promiscuous than boys at younger ages; they also cited a lack of information on the rationale behind vaccinating males. In contrast, some participants felt that vaccinating males earlier was more important because they felt that boys took more sexual risks at younger ages than girls. Whereas more than 90% of participants understood that vaccination must occur prior to exposure to be effective, many felt that vaccination should occur as close to sexual debut as possible. Reasons for postponing vaccination ranged from feeling that vaccination was unnecessary if the child was not sexually active, to wanting the child to be mature enough to understand the reason for vaccination, and to wishing to use the HPV vaccine as a tool to educate the child on other reproductive health issues.

Opinions on School-Entry Requirements for HPV Vaccine

All but 3 participants supported school mandates for routine childhood vaccinations, citing reasons such as personal protection and public health. Support for HPV vaccine mandates differed sharply by racial/ethnic group, however. More black (73%) and Latino (86%) than white (44%) participants supported school-entry requirements for HPV vaccination ($P = .007$). Black and Latino participants felt that mandates were justifiable because they would prevent HPV-related diseases and cancers, protect their children against the unintended consequences of unsafe sex, and would lead to herd immunity, maximizing the protective benefits of the vaccine. One Latino parent explained her view on why all parents should support vaccine mandates: "I'm all in favor of having any preventive treatments so I don't

[†]Parents recommending initiating vaccination at 4 years of age were concerned about sexual abuse.

think anyone should be against it." A Black parent expressed a different reason: "You don't know when the kid's going to do stupid stuff, stupid things, you don't know. To be on the safe side, you should make them have the vaccine." In contrast, many white participants who opposed mandates felt that the mechanism of transmission did not justify the intrusion on parental autonomy posed by mandatory vaccination: "It's not being transmitted unless there's [sexual] contact and whereas the measles could be transmitted without [sexual] contact." Parents/guardians who opposed vaccine mandates also cited safety concerns because of the relatively recent introduction of HPV vaccines: "If there was enough research to back it up . . . stating the long-term effects of someone who had it ten years ago and whether that group of people had long-term effects or not. But where it's so new there's not that group, so I wouldn't want it to be mandatory at this point." Regardless of whether they agreed with mandates or not, all participants felt that any requirements should include both boys and girls.

Discussion

This qualitative study of a diverse sample of low-income white, black, and Latino parents and guardians explored attitudes toward HPV vaccination, school-entry requirements, and male adolescent sexuality. Regardless of differences in race, ethnicity, gender, language, and country of origin, parents expressed similarly favorable attitudes toward HPV vaccination. Similar to our previous studies with parents of girls,[12,13] parents/guardians of sons wanted to proactively protect their children's health. Most held a positive view toward vaccinations in general and were inclined to accept HPV vaccination as well. It is important to note that participants did not view vaccinating males differently from vaccinating females, feeling that both genders should receive equal treatment. Although some earlier studies indicated that parents would prefer to vaccinate females over males,[5] recent studies do indicate high rates of parental support for accepting male vaccination if offered by physicians.[16] Some providers have also expressed concerns that offering HPV vaccination to males would be a "hard sell" because the health benefits were less obvious than those for women,[17-19] although providers who actually offer the vaccine to males have not noted this to be true.[17]

Most participants were not naïve to adolescent sexuality—in fact, many felt that male sexuality was inevitable and thus felt their sons to be at high risk of contracting HPV disease. However, a number of participants wished to vaccinate as close as possible to the time of sexual debut, which may be problematic because parents may underestimate the sexual activity of their teens.[20] Although many participants lacked information about HPV disease in males prior to the interview, after learning that HPV could cause genital warts and cancers in males, most felt that HPV presented an important health risk. Consequently, many participants felt that a benefit of HPV vaccination was the ability to protect their sons from a sexually transmitted infection even when the son failed to follow their advice about abstinence or safe sex practices. Some even felt that protecting their children from HPV through vaccination was part of their parental role in safeguarding their children's health. However, nearly half of our participants were unaware that HPV caused disease in males and that vaccination was available. Consequently, lack of information both about the reasons to vaccinate and long-term safety data were the most common reasons for declining vaccination. Whereas the connection of HPV with adolescent sexuality has been a commonly encountered concern in studies related to females,[12,21] our participants did not find this to affect their intention to vaccinate their sons. Consistent with recent literature,[22] nearly one-third of participants viewed sexual activity as normal or even expected for teenage sons. Only 1 parent intended to decline vaccination for his son because of concerns related to sexuality.

Although all participants expressed similar views and decision-making processes with respect to vaccinating their own children, attitudes differed sharply by race when the focus shifted to community policy—the question of vaccine mandates. School-entry mandates are among the most successful interventions to raise vaccination rates[23,24] and might dramatically improve HPV vaccine uptake if enacted,[25] but mandatory HPV vaccination has been mired in controversy,[26-28] and only 2 states have enacted mandates to date.[29] In our study, most black and Latino parents/guardians supported mandates, but most white parents/guardians did not. It is interesting to note that participants differed not in their attitudes toward HPV vaccination but in their valuation of public health benefits compared with personal autonomy.[30,31] We previously noted higher support for school mandates among black and Latino parents of girls,[13] and other research noted higher support for mandates among Latino[32] but not among black parents of girls[33] compared with white parents. The concordance of personal preference for vaccination with support for school mandates among black and Latino respondents may reflect a community orientation linking personal and shared welfare that has previously been described among Latino-Americans,[34] Latin American nationals,[35] and immigrants from the Caribbean and Africa[36] versus more emphasis on personal autonomy among white US-born populations. In addition, non-English speaking

parents living in the United States may be more sheltered from controversial US media coverage,[37] which has been shown to undermine support for mandatory vaccination.[38,39] Although neither proposed legislation nor studies to date have focused on mandatory HPV vaccination for boys, all participants in our study—whether they agreed with or opposed school-entry mandates—felt that such rules should be applied equally to both males and females, thus raising a new question for the vaccine mandate debate.

Our findings have several limitations. We studied a small convenience sample of parents/ guardians accompanying their sons to medical appointments. Our findings may not generalize to other groups or settings or to parents who do not seek medical care for their children. Our study was performed in a state where everyone is required to have health insurance, and our institution provides care to the uninsured and to undocumented immigrants. Thus, we were able to speak with participants who would not have had health care access in other settings. Although we did not seek to intervene with participants, we provided a short informational paragraph about HPV prior to asking questions related to HPV vaccination, so that participants could understand the questions being asked, as is often done in studies of HPV vaccine acceptance.[40-42] Prior studies indicate a limited effect of written information on parents' opinions.[43] Racial/ethnic categories were determined based on patient self-report and represented categories consistent with large survey data sets and census data. However, our sample represents a great diversity of participants whose views may differ based on country of origin. Future studies could aim to recruit larger populations from distinct racial/ethnic subgroups to further explore their unique views.

Conclusions

In summary, low-income and minority parents and guardians are inclined to accept HPV vaccination for their sons if their physicians offer the vaccine. Parents and guardians wish to protect their sons from cancer and other diseases but would like more information specifically related to HPV disease in males. Black and Latino parents and guardians are more likely than white parents and guardians to support vaccine mandates, but all feel that requirements should apply to both genders.

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