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### Title

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### Permalink

<https://escholarship.org/uc/item/0r97g5d3>

### Journal

Journal of Family Communication, 25(1)

### ISSN

1526-7431

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### Publication Date

2025-01-02

### DOI

10.1080/15267431.2024.2404865

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**To cite this article:** Samantha Garcia, Suellen Hopfer, Michelle Miller-Day, Jamie McCain & Michael L. Hecht (25 Sep 2024): How Family Communication Emerges in HPV Vaccine Parent Narratives, Journal of Family Communication, DOI: [10.1080/15267431.2024.2404865](https://doi.org/10.1080/15267431.2024.2404865)

**To link to this article:** <https://doi.org/10.1080/15267431.2024.2404865>



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## How Family Communication Emerges in HPV Vaccine Parent Narratives

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### ABSTRACT

Family communication surrounding HPV vaccination can support or hinder HPV cancer prevention strategies. We used narrative communication theory to elicit HPV vaccine decision narratives in the context of family communication from a purposive sample of 29 parents of adolescents. Parent narratives indicated that family negotiations occur throughout the decision-making process, topic avoidance was common among parents of unvaccinated and undervaccinated children, parents had concerns that vaccination is a sign of approving sexual permissiveness, and family communication was often prompted by encounters in the exam room. Understanding complex family dynamics in the context of vaccination decision-making, the role of family communication (or lack thereof) in decisions, and effective negotiation and communication strategies can inform messaging tactics aimed at addressing disagreements in families and indicate how vaccinating may align rather than conflict with family values.

### ARTICLE HISTORY

Received 12 September 2024  
Revised 1 September 2024  
Accepted 12 September 2024

Family communication may reduce risky sexual behaviors among adolescents and promote health prevention practices. For example, parent – youth communication has been associated with sexual abstinence, delay in sexual initiation, and increased condom use (Coakley et al., 2017). Similarly, mother – child communication has been linked to human papillomavirus (HPV) vaccine initiation (Garcia et al., 2023; Gross et al., 2015; Hopfer, Duong, et al., 2019; Hopfer, Garcia, et al., 2017). The parental HPV vaccine decision-making process is complex, and various reasons contribute to decisions to delay or decline the vaccine for their adolescent (Cella et al., 2020; Patel & Berenson, 2013). Understanding the context of family conversations and HPV vaccine experiences, prompted by physician encounters, is an important first step in addressing parental HPV vaccine hesitancy. Vaccine hesitancy is a growing public health threat linked to the resurgence of vaccine-preventable disease outbreaks (e.g., measles) (Arciuolo et al., 2013; Zipprich et al., 2015). We define HPV parental vaccine hesitancy as concern among parents about vaccinating (or having vaccinated) their child or the effects of vaccination, including skepticism about the vaccine's benefits. This concern is not solely determined by their child's vaccination status, because even parents who choose to vaccinate may experience hesitancy (Larson et al., 2022). Narrative communication has proven to be a valuable method for understanding vaccine hesitancy, particularly in context of health disparities and promoting health equity (Hopfer, Ray, et al., 2017).

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### Narrative communication theory

Narrative communication theory, as introduced by Fisher (1985, 1987) and further developed by Miller-Day and Hecht (2013), highlights the essential role of human storytelling in making sense of experiences, challenges, and interactions. Fisher posited that humans are natural storytellers, and the sequence, meaning, and manner of storytelling reveal critical aspects and characters relevant to the storyteller. The narrative paradigm asserts that human communication should be seen as both historical and situational – and judged as rational if the story exhibits narrative probability and fidelity. Narrative communication theory, therefore, emphasizes that meaning must be understood in a narrative context, incorporating history, culture, biography, and character. Narratives weave facts and experiences into a coherent pattern, enabling abstract rules, principles, and notions to gain full intelligibility.

Fisher (1985, 1987) narrative paradigm suggests that recounting human choices and actions offers valuable insights into health behaviors. Applying narrative communication theory to family communication – in this study, parents' vaccine decision narratives – can help us understand how parents interpret their decisions – in this case, whether to vaccinate their children against HPV. Vaccine decision narratives reveal that health behaviors, which may seem straightforward, are often complex and multifaceted, especially in the context of family communication. For example, vaccine decisions might involve negotiating with a child about their fear of needles. The rationality of a story is judged by its coherence and whether it rings true from the parent's perspective.

Narratives are understood as linguistic constructions of significant experiences that describe human action, organized around consequential experiences with characters acting in a specific context (Miller-Day & Hecht, 2013). Narratives also reflect how individuals make sense of experiences and translate them into relatable health messages (Clandinin, 2006; Connelly & Clandinin, 1990). The use of narrative inquiry can help explain influential messaging and details considered important by the storyteller, including formal messages received during medical visits (e.g., related to cancer prevention) and informal messages from family and social networks.

A narrative approach is a valuable methodology for identifying relatable information that contextualizes parents' experiences (Miller-Day et al., 2023). According to narrative communication theory, soliciting and qualitatively analyzing parents' personal experiences helps uncover how meanings are ascribed to vaccine messages and identifies larger narratives that influence behavior. Furthermore, narrative methodology can be an effective approach to reaching resistant and less involved audiences, promoting prevention efforts, and understanding behavioral models (Hopfer & Clippard, 2011; Miller-Day et al., 2013). This study uses narrative communication theory to reach a diverse group of parents to better understand their experiences communicating with family and providers about vaccinating their adolescent against HPV.

Previous studies have used narrative approaches to explore HPV vaccine decisions among young adult women and diverse populations (Garcia et al., 2023; Hopfer, Garcia, et al., 2017). This study used a narrative approach to understand HPV vaccine decision narratives among parents of adolescents. By examining how parents tell their vaccine stories, the language they use, and how interactions with family, social networks, and healthcare providers influence their decisions, narrative communication analysis provides insights into what is important to parents and how these factors manifest. This approach is bottom-up, focusing on the storyteller's perspective rather than imposing a top-down framework. The study's purpose was to understand how family communication emerges in the context of HPV vaccine decision-making narratives among parents of adolescents and how family communication strategies and messaging can inform future message design to reach HPV vaccine-hesitant parents effectively.

### ***Parental hesitancy about HPV vaccination***

Parents who hesitate to vaccinate their children against HPV often have concerns about the potential for vaccine harm, mistrust the pharmaceutical industry, or perceive the HPV vaccine as new and unnecessary (Gilkey et al., 2019). Parental attitudes about HPV vaccination have shifted throughout the years. In 2006, when the U.S. Food and Drug Administration first approved the HPV vaccine for girls and women, parental concerns originally focused on the vaccine encouraging sexual activity among girls and uncertainty of what it may cause. More than a decade later, parental concerns focus on the vaccine's necessity and safety (Beavis et al., 2018; Hopfer & Clippard, 2011). Audio recordings of parent – practitioner conversations regarding the HPV vaccine in the medical setting in two studies revealed vaccine-hesitant parents assertively questioning pediatricians about the potential for side effects or allergic reactions, expressing that they perceive the HPV vaccine as unnecessary and wanting to wait (Shay et al., 2019; Sturm et al., 2017). In one study, having practitioners disclose that they vaccinated their children was surprisingly ineffective in encouraging parents to vaccinate their children (Sturm et al., 2017). Previous studies have explored the role of parents' knowledge, perception, and attitudes on HPV vaccination, but more work is needed to understand how various communication encounters (e.g., provider-parent, parent-child, parent-parent) simultaneously shape these intrapersonal factors and the weight they carry in HPV vaccine hesitancy (Bartlett & Peterson, 2011).

### ***Family and parent – healthcare provider communication about the HPV vaccine***

Family conversations about the HPV vaccine may be an important social influence on vaccination decisions. For example, parent – child communication about the HPV vaccine can influence uptake or delay (Hopfer, Wright, et al., 2019; Hopfer, McRee et al., 2011; Stephens & Thomas, 2014). One study found greater mother – daughter communication was associated with higher HPV vaccine uptake (McRee et al., 2011). Additionally, parental discordance has been reported in previous studies as a reason for delayed measles vaccination (Torun & Bakırcı, 2006), but it is underexplored in the context of HPV vaccine decisions. In this study, we explored *family discordance*, which we define as parent – parent or parent – child disagreement regarding HPV vaccine uptake or series completion. Compounding factors such as knowledge, parenting style, and cultural values can shape HPV vaccine communication (Hopfer, Duong, et al., 2019). To capture nuances in communication experiences, qualitative exploration of family conversations about the HPV vaccine is needed to understand the complexity of factors that influence parents' perceptions and HPV vaccine decisions to inform healthcare professionals in clinic settings.

Provider communication remains a top indicator of adolescent HPV vaccine initiation (Gilkey & McRee, 2016; Gilkey et al., 2016; Oh et al., 2021). Further, high-quality provider communication about the HPV vaccine increases the odds of initiation and completion (Gilkey et al., 2016). Healthcare practitioners received no guidelines in 2006 when the HPV vaccine was first introduced to the public and consequently, were slow to adopt and recommend HPV vaccination explicitly to adolescents. The Advisory Committee on Immunization Practices and American Academy of Pediatrics published guidelines strongly recommending routine HPV vaccination for children aged 11 or 12 in 2014, providing some guidance to practitioners, and now recommend vaccination as early as age 9 (Meites et al., 2019; Saslow et al., 2020). Despite these guidelines, adoption of changes to clinical practice has been slow and quality of HPV vaccine recommendation can vary by provider. The importance of provider communication in HPV vaccine uptake has been strongly documented in the literature, but studies have yet to examine how family dynamics influence parents' acceptance of provider HPV vaccine recommendations, family communication that occurs in the exam room when the HPV vaccine is offered, and family communication that occurs

following healthcare visits when the HPV vaccine is offered (Gilkey & McRee, 2016; Gilkey et al., 2016).

This study focused on the following research questions:

**RQ1:** How does family communication manifest and emerge in parent HPV vaccine decisions?

**RQ2:** What communication processes are expressed in parent narratives?

## Method

### *Participants and recruitment*

Participants were purposively sampled by reaching out to potentially eligible parents who participated in a larger study of parent – child communication and indicated they were interested in being contacted for future studies. To fulfill recruitment goals for stratification (pro, anti, or hesitant regarding the HPV vaccine), we also snowball-sampled from participant and research staff recommendations. Parents were eligible to participate in the study if they lived in the United States, had at least one child aged 11–17, were the primary healthcare decision maker for their child, and had the HPV vaccine recommended in the last 3 years. Parents were screened for eligibility and asked to describe briefly their attitudes and beliefs about the HPV vaccine. An example screening question was, “Is/Are your child(ren) vaccinated against the HPV vaccine?” If parents had not yet vaccinated their child against HPV, follow-up questions were asked to determine hesitant and anti-HPV vaccine sentiments (e.g., “Do you plan on getting your child(ren) vaccinated against HPV?”). Recruiters then classified potential participants as hesitant, pro, or anti regarding the HPV vaccine. After completing all interviews and reviewing data, researchers recategorized one mother of a vaccinated child into the hesitant group because she expressed consistent hesitancy after her decision to vaccinate her daughter. To understand how HPV vaccine-hesitant parents differed from those with pro- and anti-vaccine narratives, this study had a recruitment goal to interview 10 parents in each category to capture the full range of vaccine attitudes. Identifying HPV vaccine hesitancy narratives was a priority because this parent subgroup may be targeted with a future intervention (Tracy, 2019a, 2019b). The literature suggests that this many interviews would likely be sufficient to achieve saturation of themes in a homogenous and purposive sample (Thorne, 2020). Purposive sampling is widely used in qualitative research for the identification and selection of information-rich cases related to the phenomenon of interest (Etikan, 2016).

Twenty-nine parents were recruited to participate in 28 qualitative interviews; 10 parents supported HPV vaccination for their child, 11 parents identified as hesitant, and eight parents did not approve of HPV vaccination but had not declined other adolescent vaccines. One parent, despite having vaccinated their child, was categorized as hesitant because they expressed continued hesitancy. One interview was conducted with both parents because they stated they are equal decision makers in their child’s health care decisions, including vaccination. Participants received \$20 as compensation for participating in a one-time interview of approximately 30 minutes ( $M = 28$ ,  $SD = 9.6$ ) that was either in person or virtual.

### *Participant demographics*

Most parents interviewed were mothers (90%;  $n = 26$ ); three fathers (10%) participated. Parents’ self-reported ethnicity distribution was 39% non-Hispanic White, 29% Hispanic, 18% Asian American, and 11% biracial. Among these families, 17 of 51 age-eligible children had been vaccinated against HPV. Approximately 71% of adolescents with pro-HPV vaccine parents received the vaccine, compared to 21% of anti-parents and 11% of hesitant parents.

### **Procedures**

An interview guide was designed to elicit parental narratives and conversations about HPV vaccine decisions for their children. An opening interview question related to how their pediatrician or a healthcare practitioner recommended HPV vaccination. Family communication about HPV vaccination is often triggered by a pediatrician's recommendation. Open-ended interview questions asked parents to reflect, remember, and recount the conversations they had about the HPV vaccine (e.g., with providers, children, spouse, other parents, and additional family members); where they received information about HPV and the HPV vaccine; their reactions to and thoughts about the HPV vaccine; and how they believed those conversations and sources of information led to their decision regarding vaccination for their adolescent.

### **Study recruitment protocol**

Researchers screened interview participants and collected demographic information about interviewees during a phone call prior to the interview. Screening questions asked about parental ethnicity, number of children, and whether parents vaccinated their children for HPV and other vaccines. In-depth semistructured interviews were conducted between July 2018 and March 2019 to elicit parental HPV vaccine decision stories (26 mothers, three fathers; one interview was conducted with both parents of one child). All participants were provided information sheets about the study with the opportunity to ask questions before providing verbal consent to participate. Interviews were audio recorded and transcribed verbatim. Transcriptions were deidentified and participants were assigned pseudonyms. For two interviews, the audio recording failed and instead, detailed notes were taken throughout the interview and details were written immediately after the interview. The study was classified as exempt by the institutional review board.

### **Data analysis**

Data analysis began with the two coders self-disclosing their positionality. One coder was a Latina daughter influenced by her mother to not vaccinate against HPV in adolescence, and later vaccinated as an adult as a result of a conversation with her provider. The second coder is pro-vaccine mother of a daughter who was 11 years old at the time of the study who was going through the decision on whether to vaccinate her daughter against HPV. The second coder eventually decided to vaccinate her daughter against HPV. Next, coders completed data immersion (i.e., reading and re-reading all interview transcripts to get an impression of parental experiences). Transcripts were read and analyzed by parent subgroup (i.e., hesitant, pro, and anti) to identify any descriptive primary codes unique to parent subgroups. Primary coding consisted of tagging meaningful units of data and naming segments of transcript with descriptive codes (e.g., fear of needles) initially regarding what messaging parents received about HPV vaccination, how they ascribed meaning to those messages, and how they talked about vaccination with family members when they did (Tracy, 2019a). Example primary codes are parent – parent discordance and parent – child discordance.

Secondary coding consisted of deductively identifying parent narratives that involved communication with family members (parent – child, parent – spouse, parent – spouse – child) or healthcare providers (parent – provider). The data were analyzed for narratives depicting family interactions and communication processes: negotiation, persuasion, control, conflict, topic avoidance, and invoking moral and cultural reasoning. We examined how parents approached conversations with children, described the focus of the parent narrative (e.g., negotiations during HPV vaccine decision making), and noted family members involved in HPV conversations (i.e., parent, spouse, child). Discrepancies in interpretation of codes among coders were discussed and resolved (Strauss & Corbin, 1998). After theoretical saturation (Bowen, 2008) was reached, coder meetings were held to determine whether saturation was reached in each stratified parent group. Parent narratives were then examined to

**Table 1.** Themes from parent HPV vaccine narratives organized by interpersonal relationships and communication processes.

| Family communication                                                                                                                                                                                                         | Interpersonal family relationships                | Communication processes                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------|
| Negotiations in decision-making process <ul style="list-style-type: none"> <li>• Fear of needles</li> <li>• Giving adolescent agency</li> <li>• Bribery</li> <li>• Framing vaccine decision as reproductive right</li> </ul> | Parent–child                                      | Negotiation, persuasion, control and conflict           |
| Avoiding HPV vaccine decisions <ul style="list-style-type: none"> <li>• To prevent confrontation and conflict</li> <li>• To avoid discussing sexual health</li> </ul>                                                        | Parent–child<br>Parent–spouse                     | Topic avoidance, control and conflict                   |
| Framing vaccination as approving sexual permissiveness <ul style="list-style-type: none"> <li>• Stigma</li> <li>• Moral values in family</li> </ul>                                                                          | Parent–child                                      | Invoking moral and cultural reasoning                   |
| Use of statistical or anecdotal evidentiary appeals in the vaccine decision-making process                                                                                                                                   | Parent–child                                      | Negotiation, persuasion, undermining vaccine confidence |
| Communicating with family about the HPV vaccine. <ul style="list-style-type: none"> <li>• Exposure to misinformation</li> <li>• Family disagreements</li> </ul>                                                              | Provider–child<br>Parent–provider<br>Parent–child | Conflict, persuasion, mediated communication            |

answer research questions and gain insight into family communication processes around HPV vaccination.

## Findings

Five themes emerged from uncovering parent narratives to understand the role of family communication in adolescent HPV vaccination. We present parent vaccine narratives by relationship or interaction (i.e., parent – child, parent – spouse, parent – provider) and communication processes (Table 1).

### *Negotiations in the decision-making process*

Parent narratives about the decision to vaccinate their child against HPV uncovered initial parent – child and parent – parent discordance. The decision process involved parent – child negotiation. A memorable narrative involved a mother sharing the story of having to negotiate with her son each fall about receiving vaccinations, including the HPV vaccine at the end of sixth grade. Michelle, a pro-vaccine mother, recalled how she navigated the discussion when her adolescent son did not want to vaccinate due to fear of needles. Communicating the consequences of a viral infection eased his anxiety about the pain and discomfort of the vaccine. She shared the following account:

Well, my son is petrified of shots. . . . He works himself up and he says, “I don’t want it.” So, last year around his physical, I told him, “OK,” and I waited to get him his flu shot a little later, so that way I knew he was going to get his HPV shot, and I told him, “You know, this time, you’re going to get two shots.” And he asked, “What two shots?” “For your flu shot and an HPV shot.” “Well, what’s the HPV shot, Mom?” I go, “So that little boys like you, when you grow up, your spike doesn’t fall off.” Because that’s what we call his penis. I said, “This will prevent your spike from getting cancer or giving other illnesses that might associate with it,” and he’s all, “Noooo!” And I said, “OK, I’m going to get you something to read [about] it and you could tell me if I’m lying or not.” Sometimes you have to get your point across. So, I brought some stuff home for him to read, and he kept saying, “I’m not getting it.” I said, “OK, let your spike fall off, so when you’re 30 years old and your spike falls off, that’s your fault.” So, that’s how we left it, and then we met a day before his appointment [and] he goes, “Mom, is it gonna hurt? The HPV shot?” I said, “It’s just like any other shot. It might hurt and might not—I don’t know—and just have some soreness and whatever.” He said, “I don’t want my spike to fall off.” I said, “Well, then you want the shot?” And he said, “Yeah,” and I said, “OK.”

Although this example of parent – child discordance about the HPV vaccine involved parental negotiation and persuasion with a child about their fear of needles, the mother ultimately allows her

son to make his own decision. She did this by first providing an explanation and information about why vaccinating against HPV is important, then letting her son come to his own decision about vaccinating.

Another mother described her son's resistance to vaccinating mainly because of his fear of needles when they visited the doctor for his annual Boy Scout checkup. The mother described the physician saying, "Oh, he's due for his vaccination." She responded, "Alright, get it done," but she said her son resisted, saying, "Do I have to? Shots? I have to get a shot?" The mother said she interjected: "Yes, you're getting it." The negotiation in this case involved bargaining for ice cream, with the son asking, "Can I get an ice cream or something?" Thus, for a subgroup of parents, communication about vaccination involved negotiating with their children about overcoming their fear of needles.

Parent – child and parent – spouse discordance that emerged in one vaccine decision narrative also resolved through negotiation. When parents disagree on the necessity and safety of the HPV vaccine, adolescents may have more leverage to opt out of vaccination. Candice, a pro-vaccine mother of eight, recalled not completing the HPV series for one daughter and not vaccinating another due to discordance with her spouse. During family discussions and negotiation, consideration of reproductive rights emerged. As a result, her children made the final decision on whether they would receive the HPV vaccine. Candice recalled a conversation she had with her daughter about the HPV vaccine:

"OK, are you ready [to get the HPV vaccine]?" And she's like, "No, I don't want to do it. It's my body." And I'm like, "You're absolutely right." So, it wasn't a—"OK, you have to get this to prevent something." It was all about, "It's your body, you have to take care of it, I don't. So, if you want it, get it. If you don't, don't."

Communication and negotiation processes in these HPV vaccine narratives centered on control and conflict. Conflict occurred between parent and adolescent and between parent and spouse that undermined confidence in the vaccine and supported complacency. One child framed vaccination as infringing on her right to have control over her body.

### ***Avoiding HPV discussion to prevent confrontation and conflict***

Vaccine topic avoidance in families occurred even after the pediatrician recommended vaccination. In some cases, parents avoided discussing HPV vaccination with their children altogether. Reasons for topic avoidance included thinking their child was unaware and didn't need to know yet, wanting to avoid having a sexual health discussion with their preadolescent child until later, avoiding vaccine discussions because of parent – spouse disagreement, fear of vaccine side effects interfering with an adolescent's athletic performance, and not considering the adolescent's opinion about HPV vaccination. Sara, a pro-HPV vaccine mother whose daughter had received one HPV dose, stated she had avoided discussing completing the vaccine series with her child:

I think she's doing her Google searches and finding the worst possible scenarios on YouTube [My daughter] said, "You know, this vaccine is for people who are sexually active, and I'm not sexually active." I'm avoiding the topic now. If she doesn't bring it [completion] up, I'm not bringing it up. She's got a big softball tournament going on right now. I'm kind of afraid that the injection site [from first shot] was gonna bother her. She was playing her sports, and I haven't heard any complaints about it [first shot]. I hate to even bring it up again.

Avoiding the topic with her hesitant daughter may have prevented vaccine series completion. Susan, a religious mother, stated she did not find the HPV vaccine necessary for her children, who intended to wait until marriage to have sexual intercourse. When asked if her children expressed any opinions about not getting vaccinated against HPV, Susan said:

Um, to be completely honest, I didn't ask their opinion, but they were there when I was talking to the doctor. And I think, you know, there's just that level of trust because I'm Mom, and they know that I'm not an anti-vaccine person. So, the fact that I didn't want them to get this one, I think they just kind of went with it. . . . Now, I will say that since they have turned 18, when they go into talk to the doctor, I'm not in the room with them, but they still never opted to do it themselves.

HPV topic avoidance was one expression of parent control and hesitancy. Parents also ascribed meaning to the sexual health aspects and implications of the HPV vaccine.

### ***Framing vaccination as approving sexual permissiveness***

For some parents, HPV vaccination did not align with their family values, given HPV transmission is associated with sexually transmitted infections. Parents expressed concern in some cases that consenting for their adolescent to receive the HPV vaccine contradicted their moral values. Maria, a Mexican American mother with two daughters and a son, referenced her culture and religion as reasons for her HPV vaccine hesitancy. Despite having vaccinated her two daughters, she expressed hesitancy and regret. The transmission of HPV through sexual activity was at odds with her religious and cultural values:

As Latinos, we are raised in a more traditional reserved-style fashion. . . . I want them to do it the right way [have sex after marriage]. I was raised in a very traditional Catholic family, and so that part, I think, was tugging at me, and wanting to instill that in my children and letting them know this is my thing. I know that you're going to do it. I get the reality, I was there, too, but it doesn't mean that I'm going to say, "Oh, *mija* [my daughter], go ahead, do whatever you want." I'm not going to make it easy. That's just what we do as Latina mothers.

This mother had received the doctor's recommendation and taken information home to discuss with her husband. But she recounted that she struggled with the decision to have her daughters vaccinated:

I was struggling with a lot of things. If I do this, will this give my daughter the ability to feel like, "Well I'm vaccinated, I could have sex whenever, however, as many times with anybody," although we have strong moral values as a family and we discussed those? My fear was as she grows older, she'll feel like, "Oh, I can just, you know, be free, do whatever I want sexually," which of course, is not part of our family values. . . . That's what I tell the girls: "You don't know who a person has been with. You might think they're great, they're wonderful and you're practicing safe sex. . . . [But] you just don't know." . . . I thought, "Let's have this conversation, *mija*, this is what we need to do, I don't know that it's the right thing. Am I giving you the go-ahead to—OK, *mija*, you're vaccinated, go have sex with whomever you want. Just know that that's not OK." I tell the girls, "Your body is precious."

This mother tried to talk with her daughter about the need for birth control because her daughter was dating. However, her daughter didn't want to discuss her sexual health with her mother, reportedly saying: "Mom! You guys are gross." Parents may decline the HPV vaccine for their adolescent to be consistent with their values related to waiting until marriage to have sex. Adolescents may want to avoid sex discussions with their parents, which further hinders HPV vaccine initiation.

Susan, a mother of a daughter and son, attributed her vaccine hesitancy to the mode of transmission of HPV. Religious values held by her and her children affected her perceptions of their susceptibility to contracting the virus.

My understanding of this vaccine is that this disease is sexually transmitted. I'm a strongly religious person. My kids were raised in church, and we are pretty open and vocal about no sex before marriage, and they're in full agreement. If the HPV vaccine can be held off until senior year, that is a better decision. There's a whole other discussion as a family that I believe needs to take place before that decision is actually made.

### ***Statistical or anecdotal evidence in HPV vaccine decisions***

One mother discussed her interest in easing her daughter's hesitancy by informing her about the odds of having an adverse side effect. This mother's narrative revealed her approach to deciding to vaccinate her children based on available evidence and weighing the different kinds of evidence. The mother contrasted her approach with that of her daughter:

I think I'm more compliant [with HPV recommendations] because I understand . . . you know, p factors, . . . rate of incidents. . . . They've had 27 million injections as of 2012 with very minor incidents or complications. So,

when my daughter sent me that video and I saw the statistics, I thought about saying to her, . . . “I guess you better stop coming in the car with me. I think you better stop playing softball, too, you know, because people that do those things more often get killed or paralyzed than those who get a vaccination.” Mm hmm. I just want to help or put it into perspective when the time comes for the second shot.

Anecdotal evidence is often emphasized, especially in the context of youth consumption of social media, because personal stories are more vivid, concrete, and easier to process than statistics that require greater effort to understand. The persuasiveness of anecdotes compared to statistics in health decision making varies and depends on factors including emotional involvement, prior beliefs, and quality of evidence. Youth who consume social media are disproportionately exposed to more anecdotal evidence (Freling et al., 2020; Michal et al., 2021).

One father justified his HPV vaccine decision regarding his adolescent daughter by using an anecdote comparing the HPV vaccine to other vaccines. For this pro-HPV vaccine father, it seemed silly that parents might be concerned about needing to know everything about the HPV vaccine when they rarely express the same concern about other vaccines. “What do you know about tetanus? I don’t think most people even know what tetanus is. . . . You know, I think the majority of people don’t know what it is.”

### *Communicating with family about the HPV vaccine*

Encounters in the exam room prompted some family communication. One pro-vaccine mom described a vaccine narrative that unfolded at the doctor’s office:

I have a daughter who is 19 and another who is turning 15 next month. My first daughter, I had her vaccinated when it was a three-vaccine series. My second daughter, we went in for her high school physical and while we were in the doctor’s office, I asked the doctor, “Can she start her HPV vaccine series today?” The doctor said yes, and my daughter started crying. She’s got her phone in her hand, and she’s immediately googling all these horror stories about HPV. The doctor was very good. She looked at my daughter and said, “What are your concerns?” My daughter said she heard the vaccine causes cancer. The doctor said, “Well, no, that’s not the case. It [the HPV vaccine] actually prevents cancer.” My daughter was concerned that the vaccine could cause paralysis. The doctor pointed out that [my daughter] “since you were a baby, you’ve had 25-plus vaccines. It is true that there is a risk with any vaccine that you could have paralysis called Guillain-Barre syndrome. It’s temporary paralysis. It happens in a very, very small sample of people.” So, she [my daughter] went ahead and got the shot. When we got home, she starts texting me these videos. Some of them were from Good Morning America. They’re probably older now, but showing these horrible videos of young women that are now in wheelchairs and died and all this stuff. Six months from now, she’s got to go back and get her second shot. That’s going to be a struggle. Not to mention the fact that her dad and I are divorced, and she immediately started texting her dad while she was in the doctor’s office. In the end, her dad was telling me, “Don’t do this. Why are you doing this? You need to read the Bible. This is a very bad vaccine. Blah blah blah.” So, it was tough. For me, it’s not an easy decision. But I think the risks are greater than the risk of not doing it.

With the first child I took in 10 years ago [to a medical visit], it was all about, “Oh, is she sexually active?” and I’m like, “Oh my God, I don’t know if she is. Let’s go ahead and get it and just get it out of the way.” And she was like, “No, mom, I don’t want it.” But you know, I’m the parent, you’re going to do what I say. And so, we got it for her, and then I read on it. And I was like, “Oh, OK, it’s not that bad. It’s going to prevent you from this, that and the other.” And she [daughter] said, “But I’m not having sex.” I said, “Well, they said just in case, you know, you’ll have it and you’ll be covered.” And she said, “What happens now? I have medicine going through my body and I don’t know what’s happening.” She complained about her arm being numb, she felt sick and faint. I think she’s being a little dramatic. But of course, my husband is very anti-vaccination, and we had do it behind his back. Then she went and complained to him. So, then he said, “She’s not getting the second and third dose,” and she agreed. I was like, “Whatever, overrule me.”

Parental disagreement about vaccinating their children against HPV presents challenges to gaining informed consent from the parent. Parental disagreement about vaccinating can also present challenges for physicians depending on the age of the child. Parent discord about vaccinating may undermine the child’s confidence by sending mixed signals. In addition to parental

disagreement, adolescents' daily access to social media may either expose them to misinformation or be significantly biased due to presenting personal anecdotes. In this parent narrative, an adolescent's exposure to social media anecdotes prompted her hesitancy. Social media exposure coupled with parental vaccine disapproval can complicate vaccine decision making and present barriers to vaccination. The mother shared that having her second daughter bring her father into the conversation escalated the contentiousness of communication among the daughter, mother, and physician. Discord among parents regarding vaccine attitudes coupled with exposure to unfiltered and negative vaccine information on social media heightened the daughter's fears regarding the vaccine.

## Discussion

Through the use of narratives, this study sought to understand how family communication manifests when parents make HPV vaccine decisions for their adolescent children. Five themes were identified that reflect a range of communication processes: (a) negotiation between family members (e.g., fear of needles, reproductive rights), (b) avoiding the topic of vaccination, (c) interpreting approval of HPV vaccination as implicit parental approval of sexual permissiveness, (d) use of statistical and anecdotal evidence in making a case to vaccinate and building vaccine confidence, and (e) parent disagreement and misinformation exposure surfacing during physician encounters. Family communication in parent narratives implicitly expressed contexts of control, conflict, moral value alignment, and topic avoidance.

These parent vaccine decision narratives highlighted how navigating family disagreements, whether parent – adolescent or parent – parent, determined vaccine adoption or series completion in some cases. Family discussions about the HPV vaccine often preceded or followed physician visits. In some instances, adolescents leveraged parent – parent disagreement to avoid vaccinating or completing the HPV vaccine series. Parental disagreement about vaccination can present challenges to healthcare providers and adolescents regarding vaccinating. Parents might forego discussions with a spouse whom they know may not agree. State law is generally the controlling authority for whether parental consent is required or whether minors can make their own healthcare decisions, including regarding vaccination, depending on the child's status (e.g., age, marriage) or the kind of healthcare services (e.g., family planning, treatment or prevention of sexually transmitted infections). Although federal law does not require parental consent for vaccination, it does require the provision of a vaccine information sheet which provides benefits and risks of the vaccine when administered. Some state laws require parental consent (covered under consent for general healthcare decisions, including vaccination). Some state laws even require that consent be given for each vaccine injection. However, there is no language or guidance on how consent should be handled when parents disagree about vaccination. Only the question of when adolescents may give consent is considered, and this often depends on the age and capacity of the adolescent (Freling et al., 2020).

Parental consent to vaccinate a child requires that one parent agree, with little guidance for physicians if the other parent does not agree or consent (Giordano, 2022). In some states (e.g., Oregon), children who present as mature minors as determined by a physician may be vaccinated without parental consent. Our study included two narratives in which a parent vaccinated their child without mentioning it to their spouse, knowing the spouse did not support vaccination. Complications ensued when the child involved the nonsupportive parent as a deliberate strategy to avoid further vaccination. Most states require one parent to accompany and consent to vaccinating their child if the child has no verbal objections. In California, minors aged 12 or older may vaccinate against HPV without the consent of a parent (Giordano, 2022).

Although the literature has acknowledged the prevalence of needle phobia (Baxter et al., 2017; Karafillakis et al., 2019), there has been an insufficient focus on how this fear influences conversations about vaccines between parents and their children and that parental negotiation skills often influence

whether the child vaccinates (McRee et al., 2011; Niccolai & Pettigrew, 2016; Niccolai et al., 2016). Parental strategies for addressing their children's fear of vaccines varied widely, from elaborate planning to resorting to rewards and bribery. One parent's story illustrated the use of gentle fear tactics to persuade her son (i.e., that his "spike" may fall off later if he doesn't vaccinate), balancing his autonomy with encouragement to vaccinate. The mother presented her preteen with the choice between the risk of a serious health consequence if unvaccinated and his fear of getting a vaccine, effectively using advance preparation to ease him into the idea of vaccination. Reluctance toward vaccination often stems from a fear of needles, a significant obstacle for many parents. How families employ various strategies to overcome this fear, ranging from offering incentives like ice cream to allowing children to make informed decisions, had been less thoroughly explored in prior studies.

Disagreements in families, whether among parents or between a parent and child, can lead to tension and conflict and significantly affect vaccine decisions. Berenson et al. (2014) found that including both parents in the vaccine decision-making process led to a lower rate of vaccination among children, highlighting the complexity of family dynamics in health decisions. Our research highlighted instances in which a teenage daughter resisted her mother's recommendations to get vaccinated, asserting her autonomy with statements like, "No, I don't want to. It's my body." This assertion mirrors societal narratives around reproductive rights and autonomy prevalent in the U.S. discourse (Mann et al., 2015). Similar expressions of self-determination have been observed among young people in England and the Netherlands who choose not to vaccinate (Baxter et al., 2017; Patty et al., 2017), downplaying the risk of HPV in favor of asserting control over their bodies. The use of the phrase "It's my body" by young adults signifies a claim to the right to make personal health decisions.

Parent narratives reflected stories of adolescents citing social media stories and misinformation during family discussions, which has been previously reported in the literature (Weller et al., 2022). Teenagers' pursuit of vaccine information on social platforms, particularly in the context of making HPV vaccine decisions, led to disruptions in communication with parents in one case and escalated conflict. Instances where adolescents turned to their phone—i.e., social media—for vaccine insights resulted in emotional upheaval, exemplified by a daughter who broke down in tears during a medical appointment. This emotional response was triggered by her discovery of videos falsely linking the HPV vaccine to paralysis, showcasing the challenges young people face in discerning misinformation online. The story highlighted how the daughter struggled to assess and differentiate critically between various types of information encountered on social media, reflecting a broader issue of young individuals' vulnerability to misleading content (Freling et al., 2020; Greene & Brinn, 2003; Nan et al., 2014; Nan & Madden, 2012; Parrott et al., 2005).

In these vaccine decision stories shared by parents, some chose to bypass further discussions with their adolescent or spouse about completion of the HPV vaccine series due to conflicts that arose after the initial dose. When parents avoid discussing the HPV vaccine with their children or what their children read on social media about vaccination, adolescents may be less likely to vaccinate or complete the series. Topic avoidance was preferred in both parent-child relationships and spousal interactions in the family's communication framework (Donovan & Quack, 2022; Felix et al., 2020). This decision to avoid the topic was driven by a desire to prevent further discord (Sun & Slepian, 2020). Literature on vaccine communication among Latino families has indicated a general hesitancy to engage in conversations about reproductive or sexual health (Aragon et al., 2023; Hopfer, Garcia, et al., 2017). Our study also highlighted this reluctance through the narrative of a Latina mother making HPV vaccine decisions for her daughters, underscoring cultural nuances in family discussions about vaccination.

One prototypical HPV vaccine parent narrative about the HPV vaccination revealed conflict expressed as the vaccine clashing with family values. Parents interpreted the vaccine as endorsing a moral stance that contradicted their parenting style. Specifically, some parents expressed concerns that vaccinating their children against HPV, a sexually transmitted infection, might implicitly endorse premarital sex, challenging their moral principles. For instance, one mother reflected deeply on her

decision to vaccinate her daughters against HPV, initially consenting but later regretting her decision, feeling it contradicted her moral values. This example underscores the insights of narrative sense-making theory regarding family communication (Koenig, 2018; Koenig & Horstman, 2015). It shows how storytelling can reveal families' nuanced interpretations of HPV vaccination. For instance, a Latina and Catholic mother might perceive the vaccine differently, not only as cancer prevention but also through a personal cultural and moral lens. Cultural and moral hesitation has been documented in previous HPV vaccine studies (Garcia et al., 2023; Hopfer, Garcia, et al., 2017; Koenig, 2018; Koenig & Horstman, 2015).

The memorable message framework (Cooke-Jackson & Rubinsky, 2023) further illuminates how parental narratives around the HPV vaccine can reveal the diverse meanings ascribed to vaccination by parents and their teenage children. An illustrative case involved a father opposed to vaccination who during a conversation with his wife – who advocated for the vaccine as a precautionary measure – argued that his control over their children's whereabouts obviated the need for vaccination as a form of protection. This underscores how parental narratives can significantly influence the interpretation and acceptance of HPV vaccination in families.

### ***Limitations and future directions***

The family communication dynamics indicated in these data reflect those of families living in the United States. Although we believe we achieved saturation of family communication codes from the parent narratives we collected, there may still be additional parent vaccine narratives reflecting alternative family communication processes. Family communication in international contexts would likely shed light on additional family dynamics and complexities that arise with HPV vaccine family discussions. A second limitation is that these data reflected the perspective of one parent and did not capture the perspectives of adolescent children or spouses. Parent narratives uncovered how adolescent HPV vaccine sentiments played a role in HPV vaccine family communication and decisions. Future studies should explore both adolescent and parent HPV vaccine sentiments. These parent narratives were derived from families that confirmed that they received an HPV vaccine recommendation from a health care provider. It is possible parents that have not discussed the HPV vaccine with a provider have additional concerns not documented in our findings.

### ***Practical implications***

Family communication plays a significant role in setting the tone and shaping vaccine attitudes during encounters with healthcare providers in the medical setting, but it also shapes vaccine attitudes and questions among adolescent children. Depending on the nature of vaccine resistance, parental negotiation skills may determine whether an adolescent vaccinates or completes the HPV vaccine series. Parents, school counselors or pediatricians should anticipate and be prepared to not only answer questions about vaccines from adolescents or parents but also address potentially underlying conflict and control family dynamics. Such family dynamics may involve arguments about reproductive rights, deliberately enlisting other anti-vaccine family members to sway vaccine decisions, or introducing vaccine misinformation into family conversations with little consideration of quality of evidence.

In short, healthcare providers and parents will likely have to navigate potentially challenging and nuanced discussions that required persuasive negotiation skills, and this may include sexual health discussions with children. More likely, negotiation skills may involve knowing how to handle fear of needles. Parental disagreement between spouses may present the biggest barrier in families with diverging vaccine viewpoints. Because the health behavior of vaccination requires an injection, considerable control and conflict might arise from family members

(child or spouse) who do not support vaccination. For parents whose children have considerable needle phobia, preparing their children in advance of a medical visit may help ease their fears.

Approaches to managing family conflict over vaccinating may manifest in various ways: topic avoidance with spouse or child, discussions of avoiding sexual permissiveness, child resistance grounded in social media anecdotes, and school athletes fearing vaccination will affect their athletic performance. Giving adolescents agency in addition to information may help mitigate conflict. Healthcare providers may facilitate family conversations by modeling nonconfrontational persuasive points while also acknowledging the social dynamics or intergenerational vaccine communication challenges present in family vaccine discussions.

## Conclusion

The World Health Organization (2019) has identified vaccine hesitancy as a significant public health issue. This concern is especially pronounced with the HPV vaccine, which is the vaccine most commonly rejected by parents (Statista, 2016). Sonawane et al. (2020) found that around 58% of parents declined to vaccinate their children against HPV. This situation highlights the necessity of effective intervention strategies. Integrating family communication and dynamics into HPV vaccine interventions will be key to increasing vaccination uptake. Understanding and contextualizing family communication dynamics and its role in vaccine acceptance is critical. Healthcare providers may be able to help parents more if they understand the potential challenges for parents (e.g., fear of needles, morals, or spousal disagreements). Understanding the family communication processes at play (e.g., conflict and control, topic avoidance, persuasion, moral values) may aid healthcare professionals in communicating more effective vaccine recommendations.

## Acknowledgments

We would like to thank the participants for their participation in this study.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Funding

This publication was supported by Merck Foundation under a subcontract for the Pennsylvania Health Management Corporation. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of Merck & Co.

## Author contributions

MH wrote the proposal that received funding for this project. SH and MM conceptualized the research study. SG and SH created the interview guide. SG, JM, and SH conducted the interviews and data analysis. SG and SH led the writing of the manuscript. All authors contributed to the drafting of this paper.

## Data availability statement

Transcript data from interviews are available upon request.

### Institutional review board statement

The study was conducted according to the guidelines of the Declaration of Helsinki and approved by Tanglewood Research.

### Informed consent statement

Informed consent was obtained from all participants involved in the study.

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