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“It all depends”: A qualitative study of parents’ views of human papillomavirus vaccine for their adolescents at ages 11-12 years

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Abstract

Routine vaccination with three doses of human papillomavirus (HPV) vaccine is recommended for adolescent girls and boys at 11 or 12 years of age; however, vaccine uptake remains suboptimal. To understand the reasons why parents may accept or refuse HPV vaccine for their children at age 11 or 12 years, we conducted a qualitative study. Semi-structured interviews were conducted with parents or guardians (n=45) whose adolescents receive care at an urban, hospital-based primary care practice. Data were analyzed using an iterative thematic approach. We found that many parents expressed high levels of support for HPV vaccine, including a majority who agreed with vaccination at age 11-12 years. Parents recognized that for prevention of consequences of HPV infection, vaccination of their child early in adolescence was desirable conceptually. However, many parents also expressed that in practice, HPV vaccine should be given to adolescents at the onset of sexual activity, a perception that led to preferences to delay administration of HPV vaccine among certain parents. These apparently contradictory views indicate the need for interventions focused on the benefits of vaccination at the recommended ages. Our findings may be useful in providers' discussions with parents about the vaccine, as pediatric and adolescent health care providers have the unique opportunity to educate parents and clarify misconceptions about vaccination.

Keywords

HPV; HPV vaccine; qualitative

Human papillomavirus (HPV) is a common sexually transmitted virus that can lead to cervical and other cancers, and to genital warts. Since mid-2006, prevention of infection

with HPV has been possible through immunization with two safe and effective vaccines. Quadrivalent (HPV4) and bivalent (HPV2) HPV vaccines include protection against HPV serotypes 16 and 18, which cause approximately 70% of cervical cancers, and HPV4 also includes protection against serotypes 6 and 11, which cause approximately 90% of genital warts. Both vaccines are administered in a three-dose series over the course of six months.

In the United States, routine immunization with HPV vaccine is recommended for all adolescent girls and boys at age 11 or 12 years by the Advisory Committee of Immunization Practices (ACIP) and the American Academy of Pediatrics (AAP), with catch-up immunization recommended for older adolescents and young adults [1, 2, 3]. HPV vaccine is recommended for 11- and 12-year olds for several reasons. First, as a preventative strategy, the vaccine is most effective when administered prior to the onset of sexual activity, and HPV is often acquired soon after sexual initiation [4]. In addition, immunogenicity is greater in younger versus older adolescents [5]. Finally, other routine adolescent vaccines (against tetanus, diphtheria, pertussis and meningococcus) are also recommended to be administered at age 11 or 12 years.

Despite the advantages afforded by HPV vaccination in the recommended age ranges, its rate of uptake lags behind that of other routine adolescent vaccines. In 2013, while 86% of adolescents had received Tdap vaccine and 78% had received meningococcal vaccine, only 57% of adolescent girls and 35% of adolescent boys had received one or more doses of HPV vaccine [6, 7]. Furthermore, previous studies have shown that parents and providers may be less willing to vaccinate younger adolescents; [8, 9, 10, 11] in 2013, just 47% of adolescent girls had initiated the HPV vaccine series by age 13 years [6,7]. Understanding the reasons why parents may accept or decline HPV vaccine for their adolescent girls and boys at 11 or 12 years of age is important in order to inform future strategies to increase HPV vaccine uptake among adolescents at the recommended ages, so that maximum benefit from this important vaccine may be achieved.

In order to address the problem of delayed uptake of HPV vaccine at the recommended ages of 11-12 years, we analyzed qualitative data from interviews with parents of adolescent girls and boys. The purpose of this analysis was to describe the reasons why parents may accept or refuse HPV vaccine for their adolescent daughters and sons at age 11 or 12 years.

Methods

Setting and Participants

We interviewed parents and primary guardians (subsequently referred to as ‘parents’) of adolescent girls and boys, regardless of their HPV vaccination status, who receive primary care at the pediatric and adolescent practices of a single urban, academic, hospital-based outpatient clinic. This clinic serves a predominantly low-income, racial and ethnic minority population. This study focused on this population to address health disparities in HPV-associated disease: racial/ethnic minority women are more likely to be infected with HPV, [12] have high-grade cervical lesions, [13] and have higher rates of cervical cancer [14,15].

Parents with at least one child between the ages of 10 and 18 were invited to participate by project staff while in the clinic waiting areas when they accompanied their child to a medical visit. A purposive sampling strategy was used to achieve diverse representation of racial and ethnic groups among study participants. The study protocol was approved by the Yale University institutional review board. Written informed consent was obtained from each participant prior to the interview and each parent received a \$20 gift card.

Data Collection

In-depth, face-to-face, semi-structured interviews were conducted by members of the research team who had been trained in qualitative interviewing techniques. An interview guide was used to ensure that similar topics were discussed with each participant. Open-ended questions in the interview guide were included to elicit parents' attitudes towards and experiences with the HPV vaccine; for example, parents were asked to offer their thoughts about the HPV vaccine, how they decided to approve or not approve the administration of HPV vaccine for their child, and their opinions about HPV vaccination for their child at different ages (11-12 years vs. 13 years and older). Parents were encouraged to share relevant information about each child, as appropriate, if they had more than one adolescent between the ages of 10 and 18. Follow up questions and targeted probes were used as needed by interviewers to provide clarification and/or to collect more informative responses. Questions were also included in the interview guide to gather demographic information and to assess knowledge about and intentions to receive the HPV vaccine. If parents had low knowledge about HPV and HPV vaccine, they were read a short, educational explanation of HPV and the HPV vaccine at the start of the interview to establish basic information to allow full participation. Interviews were conducted at a time and place convenient for the participant and took place between May, 2013 and June, 2014. Interviews were audio-recorded and transcribed verbatim for analysis.

Data Analysis

Data analysis occurred concurrently with data collection and the transcribed interviews were coded and analyzed using a thematic analytic approach [16, 17]. An initial codebook was developed that included topics from the interview guide and preliminary reading of the transcripts. The coding guide was then updated and modified in an iterative manner as it was applied to interviews and new topics were identified. Two investigators coded the first eight interviews, with instances of discrepant coding resolved through discussion and modification of codes as necessary until agreement between coders was achieved. The remaining interviews were coded by at least one investigator. Code reports were analyzed for patterns and used to identify emergent themes, with thematic saturation for this analysis reached upon enrollment of 45 participants. Data were coded and organized for thematic analysis using ATLAS.ti 7 software (ATLAS.ti Scientific Software Development GmbH, Berlin).

Results

Sample characteristics are presented in Table 1. Participants were 45 parents (84% female) of adolescent boys (54%) and girls (46%) aged between 10 and 18 years (mean age of

adolescents: 14.7 years). Twenty-two participants (49%) self-identified as black and 16 (36%) self-identified as Hispanic. Interviews lasted a median duration of 25 minutes. We identified two major, and somewhat opposing, themes: (1) Positive support for administration of HPV vaccine at ages 11-12 years; and (2) HPV vaccine viewed by parents as a “teen vaccine.” Many coupled the need for vaccination with sexual activity of adolescents. These themes are discussed in detail below with illustrative quotes from participants.

1. Positive support for HPV vaccine at 11-12 years

Most parents expressed high levels of enthusiasm for HPV vaccine and agreed with vaccination at 11-12 years. The risks of HPV vaccine were generally viewed by parents as minor and acceptable – “A shot is not gonna hurt ‘em” – in view of its benefits in preventing cancers and genital warts. Similar numbers of parents of boys and parents of girls expressed support for HPV vaccine administration at 11 or 12 years.

In describing their support for vaccination at recommended ages, participants frequently expressed strong desires to protect their children, and parents often framed vaccination in the 11-12 year age range as prevention for the future. As one mother whose daughter received HPV vaccine at 11 years of age reflected,

“...the earlier, the better. It’s prevention. So, it wasn’t, like I said, for the sexual, cause she’s 11 years old, and she may not be doing anything at that time, come on. But, it was for the cervical cancer part, and prevention is the best part of, you know, making sure things are not, don’t come up in your life later.”

Parents who supported vaccination at the recommended ages generally understood its role as a preventive measure.

Some parents discussed how guidelines would positively influence their acceptance of HPV vaccine for their children at the recommended ages. As one mother remarked upon learning that the vaccine was targeted to 11-12 year olds, “well that’s the age that it’s recommended, then that’s the age they gotta get it.” Another mother stated, “We put vaccine when they born. What’s the difference between 11 and 13?”. One parent who acknowledged some hesitancy towards the idea of vaccinating his 12-year old daughter recognized the value that a guideline would have in his making his decision: “what I’m saying is that if our medical provider [name of clinic] thinks it’s age appropriate, then it’s fine with me”.

A few parents invoked the possibility of sexual abuse when considering the protection afforded by HPV vaccination at recommended ages. As one parent remarked, “...you have to worry about an adult touching your child and things of that nature. So, I think the earlier the better.” While this was not a commonly voiced reason for vaccination at target ages, it was an unelicited and unanticipated response that illustrated the degree of concern that parents had in wanting to protect their children from harm.

A minority disagreed with HPV vaccination at recommended ages – only 8 parents (4 female and 4 male) out of the 45 interviewees felt that 11 or 12 years was too young an age for the HPV vaccine to be administered. Similar numbers of parents of boys and parents of

girls disapproved of HPV vaccination at 11 or 12 years. Parents who spoke about their approval of HPV vaccination at 11-12 years often did so in general terms: “if it’s necessary for them to get the shot, they get the shot”; however, most of the parents who emphatically disagreed with vaccination at the target ages discussed this disapproval in the context of their child specifically: “I wouldn’t want my 11 year old getting the shot.”

2. HPV vaccine viewed by parents as a “teen vaccine,” and many coupled the need for vaccination with sexual activity

While a majority expressed support for HPV vaccine at ages 11-12 years, overall enthusiasm for the vaccine was diminished by the perception of some parents that it was necessary only if their child was sexually active or planning to become sexually active. When parents spoke about what they felt to be the optimal age for HPV vaccination, a common response was that HPV vaccine was most appropriately given at the onset of puberty and/or sexual debut. Parents often associated the timing of HPV vaccination with adolescence generally; as one mother stated, “This was different because it was a teen vaccine...they’re not gonna give that to young children. You have to be a certain age to get that.” Certain parents, predominantly those of female adolescents, used this rationale to justify postponing or declining the vaccine for their child. As one mother who deferred vaccination for her daughters until age 13 reasoned, “at 11...they are still little babies, but at 13, they are teenagers...they have their periods.”

Among the parents who expressed opposition to HPV vaccination at 11-12 years – again, mostly parents of adolescent girls – a perceived lack of sexual activity at these ages was frequently cited as the reason. One father stated, “I mean I don’t see a benefit, you know, unless...your daughter at 12 years is sexually active.” Some parents of older adolescents believed that HPV vaccine was necessary only if their child were to become sexually active. As one mother of an 18-year old daughter reported, “She’s not having sex...so, why mess with something she’s not into?” as the reason why she declined the vaccine.

Some parents described how they would rely on cues from their adolescents’ behavior to determine the age at which they felt it would be appropriate to initiate the HPV vaccine series, rather than adhering to recommendations for vaccination at 11 or 12 years. As one mother explained, “It depends on the person, it depends on the child, how they live. If they out in the streets and they got boyfriends, yes (*to HPV vaccine*), but if not, it should be their choice at certain ages.” Another discussed how she favored an individualized approach towards vaccination for her children: “My 19 year old received it when she was 11 because she went through puberty at 9 years old...my 17 year old has received it already, and that was between her shoulders since she’s on birth control and now last one to do it is gonna be my (*15-year-old*) son. It took me longer, because he’s more quiet, he’s not as wild as the girls”.

While some parents discussed the perceived linkage of HPV vaccine with sexual activity as a reason to delay vaccination beyond ages 11 or 12, for other parents, this linkage was viewed as a reason to vaccinate both boys and girls at the recommended ages. For some parents, the target ages for vaccination were perceived to be consistent with the start of puberty or sexual relationships; for example, one mother said, “I think 11 and 12 is like the

perfect age because they're starting to, you know, like girls and know girls' body parts the same as boys knowing female body parts by watching TV and stuff like that." Parents sometimes commented how teenage pregnancy and sexually transmitted diseases were issues that could affect younger adolescents. A common perception among participants was that younger adolescents are more sexually active nowadays – "well they start off having sex early anyways so I think it's good" – and this appeared to inform some participants' acceptance of HPV vaccine at the recommended ages.

A few parents discussed the dissonance of acknowledging the theoretical benefits of HPV vaccine but hesitating to actually vaccinate their child due to the vaccine's perceived connection with sexual activity. A mother of a 12-year old son appeared to recognize this tension when she explained,

"They may have recommended it but I just said no because it wasn't necessary. It's just it's really, maybe it's off-putting to think about giving my son a vaccination for a sexually transmitted disease! So that might be a part of it, but it does sound like in theory that's probably the best thing because, I, you know he's probably not going to stay a virgin...so yeah. I think I just have to adjust my fears, not fears, you know, anxieties about it and maybe think about it."

Another participant explained how she was able to reconcile the idea of giving her son a vaccine that she linked with sexual activity, because she realized it would be in his best interest: "If it is something that is going to protect him. You know, um, I was kind of creeped out, like, I was like, I know this kid's not going to be having no sex. But, you never know...so again, this was like, okay. He should have it." These parents seemed to recognize that it was likely their own feelings that were leading to their hesitation toward accepting a beneficial health intervention for their children.

Discussion

Our study adds to the existing literature examining barriers to HPV vaccine uptake by focusing on the target ages for vaccination of 11-12 years and including the perspectives of parents of adolescent boys. In interviews with parents of male and female adolescents, we found high levels of support for HPV vaccine, which many participants accepted at the recommended ages of 11-12 years. Protection from HPV infection, including its consequences of cancers and genital warts, was a concept that resonated strongly with parents, particularly those who approved of HPV vaccine at the target ages. Parents who approved of the vaccination at recommended ages often cited being in accordance with vaccination guidelines as a reason for their support as well. Yet, our findings highlighted an apparent contradiction between parents' abstract approval of HPV vaccination at ages 11 or 12 years and a hesitancy to actually have their children vaccinated at that time. For many parents, the need for HPV vaccine was coupled with the onset of sexual activity, which sometimes was perceived to occur later in adolescence. Our findings are in agreement with previous qualitative studies that have similarly reported that parents tend to associate need for HPV vaccine with sexual activity, which often led to preferences to delay vaccination of their children, even though they may recognize that HPV vaccine is important [18, 19].

Increasing parents' acceptance of HPV vaccine as well as increasing recommendations of health care providers have been targeted as critical factors in achieving improved rates of uptake of this important vaccine [6, 20]. Our findings indicate that parents may not understand why vaccination at recommended ages is important. Previous studies have suggested that parents and providers may be less willing to vaccinate younger adolescents, [8, 9, 10, 11] and that parents may refuse or delay HPV vaccine if they feel that it vaccine is not needed, or the adolescent is not perceived to be at risk for HPV-related disease [21, 22]. However, parents often underestimate their children's sexual experience; waiting to vaccinate until an adolescent is perceived to be sexually active may lead to missed opportunities for prevention [23]. For these reasons, pediatric and adolescent health care providers should recommend HPV vaccine at the target ages of 11 or 12 years, and emphasize the need for protection from HPV infection early.

Although our sample included a small number of male participants, this is likely reflective of the overall gender composition in this population of parents who accompany their children to medical visits, since participants were recruited from a clinical setting. Of the small number of fathers who were interviewed, several opposed vaccination at ages 11-12 years. Many of the studies about awareness and acceptability of HPV vaccine have focused on female parents, though one recently published study found generally high levels of acceptance of HPV vaccine by Hispanic fathers for their sons and daughters [24]. Further investigation into attitudes, knowledge, and preferences of fathers about HPV vaccine is warranted.

This study has several limitations. Participants were recruited from a single urban center serving a limited geographic area, so our findings represent issues that are important to this population and may not be generalizable to other groups. In addition, as we interviewed only parents, but not adolescents or health care providers, we were only able to characterize factors influencing decisions to vaccinate from the perspectives of these parents.

In conclusion, we found that in this population, parents generally supported HPV vaccine at the recommended ages of 11-12 years and the concept of protection from HPV infection and related diseases resonated strongly with parents, yet many coupled the need for vaccination with whether their adolescents were sexually active. These apparently contradictory views are concerning as they may lead to delay in vaccination beyond the target ages and subsequently, potentially decreased effectiveness. In addition, these views indicate a need for further interventions targeting the benefits of vaccination at recommended ages, as it appears that many parents may not understand or be aware of the rationale for administration of HPV vaccine in younger adolescence.

Our findings may be helpful in strategies to promote HPV vaccine uptake by overcoming parents' hesitancy towards HPV vaccination at the recommended ages. It is important to note that we found that most parents do in fact want to protect their children from diseases caused by HPV; future vaccination interventions should capitalize on this. In addition, we found that parents who approved of vaccination for at the recommended ages viewed HPV vaccination guidelines favorably. Health care providers should be encouraged to present HPV vaccine for 11- and 12-year-olds as routine and in accordance with guidelines – rather

than as optional – which may increase parental acceptance. Our findings also may be useful in providers' discussions with parents about the vaccine, as pediatric and adolescent health care providers have the unique opportunity to educate parents and clarify misconceptions about vaccination.

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Table 1

Sample characteristics

PARENTS (n=45)	
Sex, n (%)	38 (84%)
Female	7 (16%)
Male	
Race/ethnicity, n (%)	22 (49%)
Black	16 (36%)
Hispanic	4 (9%)
Mixed race/ethnicity	3 (7%)
White	
Relationship to child, n (%)	40 (89%)
Parent	4 (9%)
Grandparent	1 (2%)
Step-parent	
Age of parent, years	43.3
Mean	31-63
Range	
Sex of child	33 (46%)
Female	39 (54%)
Male	
Age of child, years	14.7
Mean	10-18
Range	