ELSEVIER

Journal of Adolescent Health 37 (2005) 248–251

JOURNAL OF ADOLESCENT HEALTH

Adolescent health brief

Parental acceptance of the human papillomavirus vaccine

Elyse Olshen, M.D., M.P.H.[a,b,*], Elizabeth R. Woods, M.D., M.P.H.[b], S. Bryn Austin, Sc.D.[b], Marlise Luskin, B.A.[a], and Howard Bauchner, M.D.[c]

[a]*Division of Adolescent Medicine, Boston Medical Center, Boston University School of Medicine, Boston, Massachusetts*
[b]*Division of Adolescent Medicine, Children's Hospital Boston, Harvard Medical School, Boston, Massachusetts*
[c]*Department of Pediatrics, Boston Medical Center, Boston University School of Medicine, Boston, Massachusetts*

Manuscript received January 3, 2005; manuscript accepted May 13, 2005

Abstract We conducted focus groups and individual interviews to explore parental views on the human papillomavirus (HPV) vaccine. Parents were generally positive about the HPV vaccine. Some participants perceived their children were not at risk for acquiring HPV and questioned vaccinating young adolescents against HPV. Vaccine education should target parental beliefs about HPV and the optimal age for HPV vaccine administration. © 2005 Society for Adolescent Medicine. All rights reserved.

Keywords: Human papillomavirus; Vaccine acceptance

Human papillomavirus (HPV) is the most common sexually transmitted infection in the United States [1]. Infection with HPV can lead to cervical cancer or genital warts. In Phase II trials, the HPV vaccine was highly effective [2]. Once available, the HPV vaccine is likely to be offered during early adolescence, requiring parental consent.

Past studies have shown that efficacy, cost, physician recommendation, positive beliefs about vaccines, and knowledge are associated with HPV vaccine acceptance [3–5]. Prior studies have been limited by structured survey methodology. Only one previous study used a qualitative approach to evaluate parental views on vaccines against sexually transmitted infections, including the HPV vaccine [6]. In this study, disease severity and vaccine efficacy affected parental vaccine acceptance. To improve our understanding of parental acceptance of the HPV vaccine and to explore topics for future inquiry, we conducted focus groups and individual interviews with parents from two differing Northeastern communities.

Methods

We recruited a convenience sample of parents from an urban, academic adolescent clinic and a suburban private pediatric practice to participate in focus groups or individual interviews (as determined by the number and preference of parents present for each session). We continued with recruitment until we reached a point of thematic saturation, where no new ideas or issues were raised in subsequent sessions. Recruitment took place from September 2003–March 2004.

Six focus groups and three individual interviews were conducted with 25 parents. Focus groups included two to six parents (only one group had two parents). At the start of the sessions, the moderator (EO) read aloud information on the prevalence of HPV, complications of HPV infection, and potential benefits of a quadrivalent HPV vaccine. The moderator followed a script with open-ended questions (Figure 1), guided by the Health Belief Model.

Sessions were audiotaped and professionally transcribed. A research assistant took notes during the focus groups. Transcripts, audiotapes and notes from the focus groups and interviews were reviewed independently by two investigators (EO and ML). Content analysis techniques were utilized to develop coding categories and

*Address correspondence to: Dr. Elyse Olshen, Morgan Stanley Children's Hospital of New York, Columbia University Department of Pediatrics, 622 West 168th Street, New York, NY 10032.

E-mail address: eolshen@yahoo.com

1054-139X/05/$ – see front matter
doi:10.1016/j.jadohealth.2005.05.016

Tell me about some of your experiences with vaccines and your children.

A vaccine to prevent tetanus is often given to children between the ages of 10-15. Have any of your children gotten the tetanus vaccine recently?

Tell me the ages and gender of your children.

How did you feel about your child getting the tetanus vaccine?

What things about the tetanus vaccine did you like?

What things about the tetanus vaccine concerned you?

What are your initial thoughts on the HPV vaccine?

What more would you want to know about the HPV vaccine?

How concerned are you about your children becoming infected with HPV?

If and when the vaccine receives government approval, what issues would you think about when deciding whether or not to vaccinate your daughter?

What issues would you think about when deciding whether or not to vaccinate your son?

How does the fact that HPV is sexually transmitted affect your views on the HPV vaccine?

Fig. 1. Focus group guide.

themes. Codes developed independently were compared and discussed, and differences were reconciled. Through this iterative process a single coding system was developed, for phrases, sentences or paragraphs. By reviewing codes, themes emerged from the data. The study was approved by the Institutional Review Boards of the participating institutions. Written informed consent was obtained from all participants.

Results

Participating parents had between one and six children, ranging in age from three to 33 years (Table 1). All had at least one child between 10 and 15 years of age. Many parents reported that if the HPV vaccine were safe, they would give it to their child. Others were more cautious about the HPV vaccine, stating they would weigh the risks and benefits. Many parents stated that they would discuss the vaccine with their child's pediatrician before making a final decision. Five themes emerged from our analysis (discussed below, see Figure 2 for representative quotes).

Vaccines now available

Parents held favorable views about vaccines their children currently receive. Although urban parents were positive about all current vaccines, suburban parents preferred vaccines against severe infections. Physician recommendations weighed heavily on parental views of vaccines. Parents were concerned about major side ef-

Table 1
Demographic characteristics of participants

	Urban (n = 12)	Suburban (n = 13)
Mean age of participants	40.5	44.7
Female	10	12
Male	2	1
Race		
Black	7	0
Hispanic	4	0
White	0	11
Other	1	1
Parental education		
Did not complete high school	2	0
Completed high school	6	2
Completed college	4	4
Completed graduate school	0	7
Mean number of children	3.8	2.3
Mean age of children	14.5	13.1
Insurance of children		
Private	0	13
Medicaid	9	0
Uninsured/unsure	3	0

Vaccines now available: *"For the major [vaccines], the tetanus booster and things like that, I'm a big believer. I feel like the benefits outweigh the risks."*

"Even though I had heard of children having problems with vaccines, it seemed to me, we knew that it's still worth having them vaccinated."

Unfamiliar with HPV: *"I never heard of it. I've heard of syphilis, gonorrhea. I've heard of genital warts, I've heard of herpes. Are any of these considered in the HPV family?"*

"What is it? If I have HPV, what will I have, an infection?"

Risk of acquiring HPV: *"These are the ages that they experiment. They are curious…you never know what is going to happen."*

"This is somewhat of a different vaccine than tetanus and chicken pox…HPV is preventable by not having sex, not being promiscuous."

"Maybe it's not something that you're necessarily going to be exposed to, just from going to the grocery store. And if you have control over it, whether or not they're exposed to it…it would require a lot more discussion."

Age for administering the HPV vaccine: *"I can't imagine how I would explain to this kid what this vaccination is…and why you have to get it three times, if you were ten years old."*

"I would be reluctant to take the liberty of vaccinating my child without their permission or knowledge…I would want them involved in the decision."

"It's scary telling a child that they are protected by certain sexually transmitted diseases."

Administering HPV vaccine to boys and girls: *"In order for it to be effective… all kids would have to be covered."*

"I think that if I had daughters instead of boys, then I might be a little more concerned"

Fig. 2. Parental views on the HPV vaccine—selected quotes.

fects from immunizations, but realized these events were rare.

Unfamiliar with HPV

Many parents were unfamiliar with HPV. Some even confused HPV with HIV (human immunodeficiency virus). Parents had questions about the severity of HPV infection and about the types of exposures that can transmit HPV.

Risk of acquiring HPV

Many parents believed that their children would eventually be exposed to HPV. These parents had higher HPV vaccine acceptance. Other parents, who felt that their children were not at risk for acquiring HPV, were more cautious about the vaccine.

Age for administering the HPV vaccine

Parents disagreed on the optimal age for HPV vaccine administration. Some felt it would be easier to give the HPV vaccine to younger children. Others wondered how to explain the HPV vaccine to a child. Some parents worried that giving the HPV vaccine would encourage unsafe sexual activity. A few parents believed the HPV vaccine should be offered to adolescents when they can take part in the decision whether to be immunized. Others reported their views on the best age to administer the HPV vaccine would depend on vaccine dosing and length of protection.

Administering HPV vaccine to boys and girls

Most parents agreed that the HPV vaccine should be given to boys and girls, even though the vaccine has less direct benefit for boys. Most parents felt that immunizing

boys against HPV was important to protect future partners and to reduce disease transmission. Two participants who had only sons did not think that the HPV vaccine should be given to boys.

Discussion

Parents in our study held generally positive views on the HPV vaccine. However, many felt they had inadequate knowledge to fully evaluate the vaccine. As predicted by the Health Belief Model, parents who believed their children were at risk for acquiring HPV were more accepting of the HPV vaccine.

To be most effective, the HPV vaccine should be given to children before they become sexually active. According to the 2003 YRBS, 37% of males and 28% of females in the ninth grade have had sexual intercourse, and 7% of students had sexual intercourse before age 13 [7]. Thus, it would be prudent to administer the HPV vaccine to preteens. However, many parents in our study were concerned about how to explain the HPV vaccine to a child and whether the vaccine would encourage unsafe sexual practices. In contrast to the findings of one recent survey [8], parents were concerned about immunizing young adolescents against a sexually transmitted infection.

Similar to prior research on the HPV vaccine [5], we found that physician recommendation will affect parental vaccine acceptance. Only one study to date has assessed physician views on the HPV vaccine. This survey found that although gynecologists were generally positive about the HPV vaccine they were concerned about administering the vaccine to young teens [9]. Another recent study found that nurse practitioners were more reluctant to recommend vaccines against sexually transmitted infections for young adolescents versus older adolescents [10]. As parents are likely to discuss the HPV vaccine with health care providers, further evaluation of provider beliefs is needed.

This research has a number of limitations. First, we studied a small, nonrandom group of parents from two communities. Our findings may not be transferable to parents from different backgrounds. We purposefully selected our study populations to describe a range of parental views. Second, the focus groups and individual interviews may have been biased by the information on HPV that we provided. Because many parents were unfamiliar with HPV, it was necessary to educate participants to discuss the HPV vaccine. Finally, in an attempt to include data from all participants, we used focus groups and individual interviews in a single study. The comments made by parents during the individual interviews and focus groups addressed similar themes, therefore we felt justified in including both modalities in the analysis.

In conclusion, this qualitative study demonstrated that parents hold generally favorable views about the HPV vaccine. Issues that should be explored in future studies include: lack of familiarity with HPV, varied beliefs about risks of acquiring HPV, and concerns regarding the age specifications for the vaccine. Parent and provider education should emphasize that adolescents are at risk for HPV infection and that to be most effective the HPV vaccine should be given to children before their sexual debut.

Acknowledgments

This work was funded by the Joel and Barbara Alpert Endowment for the Children of the City Leadership Education in Adolescent Health Project, Maternal and Child Health Bureau, U.S. Department of Health and Human Services (5T71-MC00009-13-00). Howard Bauchner, M.D. was funded in part by a grant from NICHD K-24HD 042489.

References

[1] Cates W. Estimates of the incidence and prevalence of sexually transmitted infections in the United States. Sex Transm Dis 1999; 26(4):S2–7.

[2] Koutsky LA, Ault KA, Wheeler CM, et al. A controlled trial of a human papillomavirus type 16 vaccine. N Engl J Med 2002;347: 1645–51.

[3] Zimet GD, Mays RM, Winston Y, et al. Acceptability of HPV immunization. J Womens Health Gend Based Med 2000;9(1):47–50.

[4] Kahn JA, Rosenthal SL, Hamann T, et al. Attitudes about human papillomavirus vaccine in young women. Int J STD AIDS 2003; 14:300–6.

[5] Davis K, Dickman ED, Ferris D, et al. Human papillomavirus vaccine acceptability among parents of 10- to 15- year old adolescents. J Low Genit Tract Dis 2004;8:188–94.

[6] Mays RM, Sturm LA, Zimet GD. Parental perspectives on vaccinating children against sexually transmitted infections. Soc Sci Med 2004;58:1405–13.

[7] Centers for Disease Control. Youth Risk Behavior Survey—United States 2003. MMWR 2004;53(S S02):1–96.

[8] Zimet GD, Mays RM, Sturm LA, et al. Parental attitudes about sexually transmitted infection vaccination for their adolescent children. Arch Pediatr Adolesc Med 2005;159:132–7.

[9] Raley JC, Followwill KA, Zimet GD, et al. Gynecologists' attitudes regarding human papillomavirus vaccination: a survey of Fellows of the American College of Obstetricians and Gynecologists. Infect Dis Obstet Gynecol 2004;12:127–33.

[10] Mays RM, Zimet GD. Recommending STI vaccination to parents of adolescents: The attitudes of nurse practitioners. Sex Transm Dis 2004;31:428–32.