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HPV Vaccination Uptake Among Cambodian Mothers

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Abstract Women of Southeast Asian descent have higher cervical cancer incidence rates than any other group. Widespread use of HPV vaccination could prevent up to 70% of cervical cancers. There is little published information addressing HPV vaccination uptake among Asian Americans. We conducted a survey of Cambodian women with daughters who were age-eligible for HPV vaccination. Survey items addressed HPV vaccination barriers, facilitators, and uptake. Only 26% of the survey participants reported any of their age-eligible daughters had received vaccination, and only 40% reported a previous physician recommendation for vaccination. Higher levels of vaccine uptake were strongly associated with having received a doctor's recommendation for vaccination ($p<0.001$) and having asked a doctor for vaccination ($p=0.002$). HPV vaccine uptake was relatively low in our Cambodian study group. Educational initiatives should encourage health care providers who serve Cambodian families to recommend HPV vaccination and empower Cambodian mothers to ask their daughters' doctors for vaccination.

Keywords Cambodian · Cervical cancer · HPV vaccination

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Introduction

Women of Southeast Asian descent have higher cervical cancer incidence rates than any other racial/ethnic group, and the incidence among Cambodian Americans is twice the incidence among non-Hispanic whites (15.0 versus 7.7 per 100,000) [1–3]. Virtually all cases of cervical cancer are caused by HPV infection [4]. Two HPV vaccines (Gardasil and Cervarix) have recently been approved for use in the USA, and widespread use of these vaccines could prevent up to 70% of cervical cancers. Current recommendations include routine HPV vaccination for girls ages 11–12, catch-up vaccination for girls and women ages 13–26 who have not yet been vaccinated, and vaccine use at a health care provider's discretion for girls ages 9–10 [5].

Parental consent is generally required for any medical intervention given to individuals younger than 18. Therefore, population-level HPV vaccination uptake among girls and adolescents will be largely determined by parental acceptance of the vaccine [6]. Mothers are particularly important to vaccine uptake because they usually have primary responsibility for children's health care [7]. There is very little published information addressing HPV vaccination among Asian American girls and adolescents. Asian Americans are a diverse ethnic group and, therefore, data collection efforts should focus on each Asian subgroup so that educational initiatives can be tailored to specific Asian communities [8]. This brief report provides findings

from an exploratory study addressing HPV vaccine barriers, facilitators, and uptake among Cambodian mothers of girls in the 9–18 age group.

Methods

Study Overview

We conducted a survey of Cambodian women, addressing multiple preventive health issues (including hepatitis B testing, physical activity, and HPV vaccination), over a 6-month period in 2010. We applied a list of Cambodian last names to an electronic database of telephone listings for the metropolitan Seattle area. All the 1,147 addresses that were associated with one of these last names were included in our survey sample. Surveys were conducted in women's homes by female Cambodian interviewers, respondents were given the option of completing their survey in Khmer or English, and five door-to-door attempts were made to contact each household.

Cambodian women in the 18–64 age group were asked to participate in our survey. If a household included more than one age-eligible Cambodian woman, we attempted to interview the woman with the most recent birthday. Survey participants were asked if they had any daughters in the 9–18 age group. Women who indicated they had at least one daughter in this age group were asked to complete the survey section addressing HPV vaccination (and were included in the reported analysis).

Survey Instrument

Mothers were asked whether they had ever heard about a vaccine that prevents HPV infection. After responding to this question, they were read the following statement: "HPV is a common sexually transmitted virus that can cause cervical cancer in women. A vaccine to prevent HPV infection has recently been approved for girls and young women. It is sometimes called the HPV vaccine, the human papillomavirus vaccine, the cervical cancer vaccine, Gardasil, and Cervarix." Mothers were then asked if any of their daughters who were aged 9 to 18 years had received the vaccine that prevents HPV. Survey participants provided information about their age, educational level, and marital status. They also provided information about their birthplace and English-language proficiency. Foreign-born participants specified how many years they had lived in the USA.

An earlier qualitative study addressing HPV vaccination in the Cambodian community and the Health Behavior Framework guided our survey instrument development [9–11]. We included items addressing knowledge and beliefs, as well as communication with others. Women were asked if they thought the HPV vaccine is effective, the HPV vaccine may have side effects, and the HPV vaccine could cause health problems later in life. They were also asked if they thought girls who get the vaccine may be more likely to think it is OK to have sex, and if they thought the vaccine is more effective when it is given before or after a girl starts having sex. Additionally, each woman was asked if any of her family members had ever suggested that her daughter(s) should get the HPV vaccine, any of her friends had ever suggested that her daughter(s) should get the HPV vaccine, a doctor had ever told her that her daughter(s) should get the HPV vaccine, and she had ever asked a doctor to give her daughter(s) the HPV vaccine.

Data Analysis

Age at immigration to the USA was calculated from responses to questions addressing age and years since immigration. Categories for this variable were <20 and ≥20 years. US-born respondents were included in the ≥20 years category. Women were classified as being proficient in English if they reported speaking English fluently or very well. Fisher's exact tests were used to examine the relationship between each study variable and HPV vaccine uptake.

Results

Survey Response

We were able to verify that 519 of the 1,147 addresses in our survey sample included at least one Cambodian woman in the 18–64 age group. The remaining addresses had one of the following dispositions: household verified not to be Cambodian, household Cambodian but did not include an age-eligible woman, unable to contact household after five attempts, and not a residential address. Women from 367 (71%) of the 519 households that were verified to include a woman aged 18–64 years completed surveys. Of the 367 women who participated in the survey, 96 (26%) indicated that they had at least one daughter in the 9–18 age group (and were included in this HPV vaccine uptake analysis).

Study Group Characteristics

The demographic characteristics of the Cambodian mothers are shown in Table 1. Sixty-nine percent had less than a high school education, and 78% had limited English proficiency. A majority of our participants thought the HPV vaccine is effective (60%), and the HPV vaccine is more effective when given before a girl starts having sex (68%). About one third to one half thought that the HPV vaccine may have side effects (42%), the HPV vaccine could cause health problems later in life (30%), and girls

Table 1 Study group characteristics and HPV vaccine uptake (N=96)

Variable	N (%)	HPV vaccine uptake %	p value
Age (years)			
<40	34 (36)	24	0.65
≥40	61 (64)	28	
Education (years)			
<12	65 (69)	25	0.76
≥12	29 (31)	28	
Currently married			
Yes	69 (72)	29	0.29
No	27 (28)	19	
Age at immigration (years)			
<20	46 (48)	33	0.18
≥20	49 (52)	20	
English proficiency			
Yes	21 (22)	24	0.79
No	75 (78)	27	
HPV vaccine is effective			
Yes	58 (60)	28	0.67
No	38 (40)	24	
HPV vaccine may have side effects			
Yes	40 (42)	30	0.46
No	56 (58)	23	
HPV vaccine could cause health problems later in life			
Yes	29 (30)	28	0.82
No	67 (70)	25	
Girls who get the HPV vaccine may be more likely to think it is OK to have sex			
Yes	47 (49)	19	0.13
No	49 (51)	33	
HPV vaccine is more effective when given before a girl starts having sex			
Yes	65 (68)	28	0.59
No	31 (32)	23	
Family member(s) had suggested HPV vaccination			
Yes	13 (14)	46	0.08
No	83 (86)	23	
Friend(s) had suggested HPV vaccination			
Yes	8 (8)	38	0.43
No	88 (92)	25	
Doctor had recommended HPV vaccination			
Yes	38 (40)	55	<0.001
No	58 (60)	7	
Had asked doctor for HPV vaccination			
Yes	18 (19)	56	0.002
No	78 (81)	19	

who get the HPV vaccine may be more likely to think it is OK to have sex (49%). The proportions indicating that a family member had suggested vaccination, a friend had suggested vaccination, and a doctor had recommended vaccination were only 14%, 8%, and 40%, respectively. About one fifth (19%) had asked a doctor for HPV vaccination.

HPV Vaccine Uptake

Only about one third (36%) of the mothers had heard of HPV vaccination (before it was described to them), and only about one quarter (26%) indicated that any of their daughters had received HPV vaccination. Higher levels of HPV vaccine uptake were strongly associated with having received a doctor's recommendation for vaccination (p< 0.001) and having asked a doctor for vaccination (p= 0.002). The relationship between having family members who had suggested vaccination and HPV vaccine uptake was marginally statistically significant (p=0.08).

Discussion

The recommended HPV vaccination schedule is three doses administered over a 6-month period [4]. The 2009 National Immunization Survey–Teen found the proportions of females aged 13–17 years that had initiated (received at least one vaccine dose) the HPV vaccine series were 44% among all racial/ethnic groups in the USA, 42% among all Asian Americans, and 60% among Washington State residents [12]. However, our findings suggest that only 26% of Cambodian girls and adolescents in the 9–18 age group have initiated the HPV vaccine series.

Bastani and colleagues recently completed telephone interviews with 490 low-income mothers from multiple racial/ethnic groups. Survey respondents were all women who called a Los Angeles County Department of Public Health service referral hotline and had a daughter who was age-eligible for the HPV vaccine. Similar to our findings, only 25% of 98 Chinese participants and 24% of 66 Korean participants reported their daughters had initiated the HPV vaccination series [11].

Previous research has shown that provider–patient communication variables are the most important correlates of Pap testing in Southeast Asian communities [13, 14]. For example, Nguyen and colleagues found that Vietnamese women who had requested a Pap test were nine times more likely to have been screened than women who had never requested the test, and women who had received a physician recommendation were eight times more likely to have been screened than those who had not received a recommendation [14]. Our findings indicate that provider–patient communication variables are also important correlates of HPV vaccine uptake among Cambodian mothers. However, only 40% of the mothers who participated in our survey reported that a doctor had recommended HPV vaccination.

Our study has several strengths. Specifically, we used population-based sampling methods, administered the survey face-to-face, and had relatively high cooperation rates. However, there are also several limitations. Our survey was conducted in one metropolitan area, only households that were included in a database of telephone listings were eligible for the survey, respondents may have had different preventive behavior patterns than those who were unreachable or refused participation, and we did not attempt to verify vaccination self-reports with provider reports. Additionally, the sample size for this exploratory study of HPV vaccine uptake was relatively modest.

In conclusion, our findings suggest that HPV vaccine awareness and uptake are low among Cambodian American mothers. Linguistically appropriate HPV vaccine educational initiatives should be developed and implemented in Cambodian and other Asian immigrant communities [11]. Intervention programs should aim to improve provider–patient communication by encouraging health care providers who serve Cambodian families to recommend HPV vaccination, as well as by empowering Cambodian mothers to ask their daughters' doctors for HPV vaccination.

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