

## RESEARCH COMMUNICATION

# HPV Vaccine Knowledge and Beliefs Among Cambodian American Parents and Community Leaders

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## Abstract

**Background:** The cervical cancer incidence rate among Cambodian American women is 15.0 per 100,000, compared to 7.7 per 100,000 among non-Latina white women. HPV infection has been identified as a universal risk factor for cervical cancer. The HPV vaccine was recently approved in the United States for females aged 9-26 years. There is little information about HPV vaccination knowledge and beliefs in Southeast Asian communities. **Methods:** We conducted 13 key informant interviews with Cambodian community leaders, as well as four focus groups with Cambodian parents (37 participants). Two of the focus groups included fathers and two of the focus groups included mothers. Interview and focus group questions addressed HPV vaccine barriers and facilitators. **Results:** Participants had limited knowledge about HPV infection and the HPV vaccine. Barriers to HPV vaccination included a lack of information about the vaccine, as well as concerns about vaccine safety, effectiveness, and financial costs. The most important facilitators were a health care provider recommendation for vaccination and believing in the importance of disease prevention. **Discussion:** Future cervical cancer control educational programs for Cambodians should promote use of the HPV vaccine for age-eligible individuals. Health care providers who serve Cambodian communities should be encouraged to recommend HPV vaccination.

**Key Words:** Cervical cancer - Cambodian Americans - HPV vaccine

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## Introduction

The 2000 United States (US) Census counted 206,000 Cambodians. Over 99% of Cambodian Americans came to the US as refugees or immigrants over the last three decades, or are the children of these individuals (Niedzwiecki and Tuong, 2004). Further, approximately 90% of Cambodian adults aged 20 years and older are foreign-born (Taylor et al., 2009). Cambodian Americans are economically and educationally disadvantaged (29% live below the Federal poverty level and 53% have less than a high school education), and linguistically isolated (92% speak Khmer at home and only 46% speak English very well or fluently) (Department of Commerce, 2004). However, this underserved population has received very little attention from health disparity researchers (Ghosh, 2003). The majority of Cambodian Americans live in one of three states: California, Massachusetts, or Washington (Niedzwiecki et al., 2004).

Cambodian American women experience a cervical cancer disparity. Specifically, the cervical cancer incidence rate among Cambodian Americans in California and the Puget Sound area of Washington State is 15.0 per 100,000 women, compared to 7.7 per 100,000 among non-Hispanic white women (Kem and Chu, 2007). HPV infection has been identified as a universal risk factor for cervical cancer

(Parkin, 2006). Consequently, the US Food and Drug Administration (FDA) approved the quadrivalent HPV vaccine (HPV 16, HPV 18, HPV 6, and HPV 11) for children, adolescents, and young women aged nine to 26 years in 2006 (Markowitz et al., 2007). A recent population-based survey assessed HPV vaccine acceptability among Californian parents of daughters who were age-eligible for the HPV vaccine, and found that Asian Americans were significantly less likely to accept the HPV vaccine than non-Hispanic whites and Hispanics (Constantine and Jerman, 2007).

Qualitative methods are useful tools for investigating a new area of research and developing new intervention programs (Farquhar et al., 2006). They are also appropriate when conducting research in communities about which little information exists (Matthews et al., 2000). Very few studies have examined HPV vaccination awareness in Southeast Asian populations. We conducted a qualitative study addressing HPV vaccine knowledge and beliefs among Cambodians living in Seattle, Washington during 2008 (shortly after FDA approval of the HPV vaccine) (Markowitz et al., 2007). Our brief report provides qualitative information that could be used to guide future quantitative data collection efforts in Cambodian American communities, as well as the development of HPV educational materials and intervention programs.

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## Materials and Methods

### Key Informant Interviews

We conducted 13 key informant interviews with local Cambodian leaders (who need to know about the HPV vaccine so that they can promote vaccination coverage in their community). Our research group has collaborated with a Cambodian Community Coalition on multiple health-related projects for over a decade. The community leaders included individuals who serve on the Cambodian Community Coalition, as well as other Cambodians who work with organizations that serve Cambodians (identified by Coalition members). Interviews were conducted by a Cambodian staff member (either at the community leader's workplace or a local community center), and lasted about 30 minutes. Because all the Cambodian leaders spoke English fluently, the interviews were conducted in English (to avoid unnecessary translation costs). Each community leader received a small honorarium for completing an interview as a token of appreciation for his/her time.

### Focus Groups

We held four focus groups. Two of the groups included fathers and two included mothers. Eligibility criteria included being of Cambodian descent, being able to speak and understand Khmer, and having at least one daughter who was age-eligible for the HPV vaccine (i.e., in the 9-26 age-group). We chose four focus groups because the topic is reasonably complex, and approximately 10 participants per group because this size is large enough to get a variety of viewpoints and yet small enough for participants to have opportunities to express themselves (Morgan, 1988). It should be noted that Morse has suggested that 30 to 40 focus group participants provide sufficient breadth of input to explore a new area (Morse, 2000). We segmented the groups by gender to ensure that all participants felt comfortable giving their opinions. The focus group participants were recruited from two community-based organizations that serve the Cambodian community in metropolitan Seattle: the Cambodian Women's Association and Khmer Community of Seattle-King County. Focus groups were held at the community-based organization offices (because of their proximity to Cambodian neighborhoods and easy access via public transportation), and lasted approximately two hours. A bilingual (Khmer and English speaking) Cambodian facilitator conducted the focus groups in Khmer. Focus group participants were offered a small honorarium, as well as refreshments during the focus group sessions.

### Questions

Key informant interview and focus group participants were asked whether they had heard of HPV and the HPV vaccine. They were then read the following statement: "A HPV vaccine has recently been approved for use in the US. The government has approved HPV vaccinations for all females aged nine to 26 years. The HPV vaccine can prevent most cervical cancers in women." After the statement had been read to them, participants were asked a series of questions about the HPV vaccine. For example, participants were asked the following questions: Why did

you have your daughter(s) vaccinated? Why have you not had your daughter(s) vaccinated? Why do you think some Cambodian parents will get their daughter(s) vaccinated? Why do you think some Cambodian parents will not get their daughter(s) vaccinated? What concerns do you have about HPV vaccinations? What information about HPV vaccinations would you find useful?

### Data Analysis

We transcribed the focus group sessions verbatim in Khmer and transcribed the key informant interviews verbatim in English. Additionally, the focus group transcripts were translated into English (for review by staff members who did not speak Khmer). Three members of the research team independently coded the transcripts for thematic content. These coders met regularly to review and summarize the key themes that emerged from the key informant interviews and focus group sessions (Pope and Mays, 1995).

## Results

### Study Group Characteristics

Six of the 13 key informants were men and 10 were 40 years of age or older. All the community leaders had at least 14 years of education, 12 were currently married, 11 were born in Cambodia, and 12 had been in the US for at least 10 years. Seven of the community leaders had daughters who were age-eligible for the HPV vaccine. The characteristics of our focus group participants are given in Table 1. Nearly all (97%) were born in Cambodia, 41% had lived in the US for less than 10 years, and 54% had limited English proficiency.

### General Findings

Ten of the community leaders had heard of HPV and eight had heard of the HPV vaccine (before they were read the HPV vaccine statement). Three of the seven

**Table 1. Characteristics of the Focus Group Participants**

Characteristic	Category	N	%
Gender	Male	18	49
	Female	19	51
Age in years	<40	11	30
	≥40	26	70
Education in years	<12	22	59
	≥12	15	41
Currently married	Yes	28	76
	No	9	24
Country of birth	Cambodia	36	97
	Other	1	3
Years in US	<10	15	41
	≥10	22	59
Spoke English very well or fluently	Yes	17	46
	No	20	54
Number of age-eligible daughters	1	24	65
	≥2	13	35

**Table 2. Barriers and Facilitators**

Factor	Examples of Key Informant Quotes	Examples of Focus Group Participant Quotes
Beliefs about prevention	Because of the benefit. It's a benefit for their health. It's something that can prevent them from getting cervical cancer in the future. [Man aged 30-39] Whether a vaccine is for cervical cancer or other, most do not understand the importance of prevention until they get the disease. [Man aged 60-69]	Prevention is better than treatment. It costs less and saves time. [Man] Prevention is better than waiting until you get it. [Woman] I think if you are going to have the disease, you will get it whether you have the vaccine or not. [Woman]
Traditional beliefs	Some parents believe in traditional medicine more than Western medicine. That's why they don't allow their daughters to get the vaccine. [Man aged 50-59] I don't think a lot of people get their kids vaccinated because of the culture...whatever is going to happen will happen. [Woman aged 40-49]	
Lack of knowledge	It's not known that it is there and available. [Woman aged 20-29] All of my kids had hepatitis A, B, and C shots. But this is something new and we don't know. [Woman aged 30-39] I believe that there's not enough education, information, or outreach. If people are not clear, they may not be willing to do it until they have the information. [Woman aged 40-49]	I personally never thought it is necessary until you are actually infected with it. [Man] I have not heard of it and that's why they are not vaccinated. [Man] I have daughters but I didn't know there is a vaccine. [Woman] If they knew the vaccine is available, they would have their daughters vaccinated. Nobody wants their daughters to be sick. [Woman]
Beliefs about sexual activity	Probably they feel like their daughters are not at the age to be sexually active. [Man aged 40-49] My friends said don't let her get the vaccine because she has not done anything. [Woman aged 40-49] Because I don't think my children have sexual activities. [Woman aged 40-49]	
Beliefs about promiscuity	If they knew more about it and what it is for, they probably would say no because they would think it would promote promiscuity. [Woman aged 20-29] Because they want their kids to not sleep around. [Woman aged 40-49]	
Concerns about safety	I don't know the side effects or consequences of getting it. [Man aged 30-39] Well, I have to do more research on that. If it's very safe for them, I'll do it. Right now, it was just approved. [Man aged 40-49] They told me it causes health problems later on. [Woman aged 40-49] I am concerned it's going to affect other parts of their body. [Woman aged 40-49]	It is new. What if you got the shot and die. [Man] Some women become infertile forever. [Man] I am concerned that the vaccine may cause other health problems. [Woman] I am afraid that it may cause other major health problems equal to cervical cancer. [Woman]
Concerns about effectiveness	The effectiveness is important. I need information that it is very effective. [Man aged 40-49] I want to know how effective it is. [Man aged 40-49]	I am concerned that it is not effective with some people. [Man] My concern is how effective it is and what is the proven success rate of the vaccine. [Man]
Concerns about cost	Cambodians can't afford the vaccine if it costs too much. [Man aged 60-69] Well, if it costs money and people don't have health insurance or don't have a lot of money, they probably won't get it. [Woman aged 20-29]	I am concerned about those who work, have children, and do not have health insurance. Their income is little, and having to get their daughters vaccinated may cause financial hardship. [Man] My concern is the cost. Some families have many daughters. [Man] Even though they know that the vaccine is available, some parents do not get their daughters vaccinated because the cost can be too much. [Woman]
Communication with healthcare providers.	I have not been told by my doctor to have my daughter vaccinated [Man aged 60-69]. Because I trust the medical experts and I have hung around with other health care providers and they say that it is good to have it [Woman aged 40-49]. Well, we didn't know. Our doctor didn't remind us or tell us about HPV [Woman aged 40-49].	Most doctors have not told us about the HPV vaccine. [Man] Some parents do not understand. The doctor needs to explain to them carefully. [Woman] My doctor recommended it. For prevention. [Woman] If they said I have to have my daughter vaccinated I would. I believe my doctor. [Woman]

community leaders with daughters who were age-eligible for the HPV vaccine said their daughters had already been vaccinated. Very few of the focus group participants had heard of HPV or the HPV vaccine. There was some confusion between HPV and HIV/AIDS. Only a couple of focus group participants said their daughters had received the HPV vaccine. Many male focus group

participants did not know whether their daughters had received the HPV vaccine or not, and indicated that this was the type of topic that they did not discuss with their daughters.

#### *Barriers and Facilitators*

Table 2 provides examples of key informant and focus

group participant quotes about HPV vaccine barriers and facilitators. Both the key informants and focus group participants indicated the following factors could influence HPV vaccine uptake in the Cambodian community: beliefs about prevention; lack of knowledge; concerns about HPV vaccine safety, effectiveness, and costs; and healthcare provider communication issues. They indicated that beliefs about disease prevention could both positively and negatively impact HPV vaccine use. Similarly, a healthcare provider recommendation for vaccination was described as a facilitator and the absence of a healthcare provider recommendation was described as a barrier. The key informants and focus group participants almost uniformly identified lack of knowledge about the availability of the HPV vaccine and basic information about the HPV vaccine as important barriers to its use. Some of our key informants thought that traditional Cambodian beliefs might negatively affect HPV vaccine use; the vaccine is unnecessary for young Cambodians because they are not sexually active; and parents might not permit their daughters to be vaccinated because HPV vaccine receipt could promote promiscuity.

#### *Information*

The key informants and focus group participants thought that the following would be useful to the Cambodian community: information about who is eligible for the HPV vaccine, how often the vaccine should be given, and how long the vaccine lasts. Additionally, they thought information about the benefits and side effects of vaccination would be important. Finally, the key informants and focus group participants wanted information about healthcare providers and clinics that offer the HPV vaccine, as well as vaccine costs and medical insurance coverage of the vaccine.

## **Discussion**

The Centers for Disease Control and Prevention, in partnership with the American Academy of Pediatrics, launched a campaign in 2007 that promoted use of recommended vaccines for 11 and 12 year olds (including HPV for girls); and the HPV vaccine was actively marketed in the US through direct consumer advertising and public awareness campaigns by the manufacturer (Shefer et al., 2008). A recent survey of Pennsylvania and Virginia residents indicated that a majority of the general US population has heard of HPV infection and HPV vaccination. Specifically, 95% of Pittsburgh (Pennsylvania) and 90% of Hampton (Virginia) adults had heard of HPV, and 92% of Pittsburgh adults and 74% of Hampton adults had heard of the HPV vaccine (Ragin et al., 2009). In contrast, we found that very few of our Cambodian focus group participants were aware.

Brewer and Fazekas recently reviewed studies of HPV-related beliefs and HPV vaccine acceptability. Their systematic review indicated that most parents were positive about vaccinating their daughters against HPV. Vaccination acceptability was higher when people believed the vaccine was effective, a physician would recommend it, and HPV infection was likely. Cost and

concerns that vaccination would promote adolescent sexual behavior were barriers to vaccination (Brewer and Fazekas, 2007).

The HPV vaccine is relatively expensive (over \$300 for the three-dose series) and we found that financial costs are an important barrier to HPV vaccine uptake by Cambodian parents (who may have multiple daughters who are age-eligible for vaccination). However, the Vaccines for Children program covers the cost of vaccination for Medicaid-eligible and uninsured children and adolescents up to the age of 18 years (Shefer et al., 2008). Efforts to promote the HPV vaccine in Cambodian and other economically disadvantaged communities should provide information about facilities that offer HPV vaccination through the Vaccines for Children program.

Dinh and colleagues conducted a HPV vaccine acceptability survey in Da Nang, Vietnam. An overwhelming majority (95%) of mothers with age-eligible daughters indicated that a recommendation from their doctor would be very important in their vaccine decision-making, and 78% indicated the media would be very important (Dinh et al., 2007). Physician recommendation has also been shown to be strongly associated with cervical cancer screening participation among Cambodian American and Vietnamese American women (Nguyen et al., 2002; Taylor et al., 1999; Taylor et al., 2004). As in other US populations, healthcare provider endorsement will likely be a key determinant of HPV vaccine acceptance by Cambodian parents and potential vaccine recipients (Brewer et al., 2007). Healthcare providers who serve Cambodian communities should be encouraged to recommend HPV vaccination, and Cambodian parents should be empowered to ask healthcare providers for vaccination.

In conclusion, our findings indicate that information about the HPV vaccine has not been disseminated to the US Cambodian community. They also indicate that Cambodian community leaders and parents would like more information about the HPV vaccination so that they can make informed decisions about vaccination. Culturally and linguistically appropriate HPV vaccine audio-visual and print educational materials should be developed for Cambodian Americans. Educational programs should emphasize that the vaccine is safe and effective in preventing cervical cancer, as well as the importance of giving the vaccine before the onset of sexual activity (Sherris et al., 2006). HPV vaccine outreach efforts should target Cambodian Americans through the community-based organizations and healthcare facilities that serve them, as well as Khmer language media outlets.

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## References

- Brewer NT, Fazekas KI (2007). Predictors of HPV vaccine acceptability: a theory-informed, systematic review. *Prev Med*, **45**, 107-14.
- Constantine NA, Jerman P (2007). Acceptance of human papillomavirus vaccination among Californian parents of daughters: a representative statewide analysis. *J Adolesc Health*, **40**, 108-15.
- Department of Commerce (2004). We the people: Asians in the United States-Census 2000 special reports. Washington DC: US Department of Commerce.
- Dinh TA, Rosenthal SL, Doan ED, et al (2007). Attitudes of mothers in Da Nang, Vietnam toward a human papillomavirus vaccine. *J Adolesc Health*, **40**, 559-63.
- Farquhar SA, Parker EA, Schulz AJ, Israel BA (2006). Application of qualitative methods in program planning for health promotion interventions. *Health Promot Pract*, **7**, 234-42.
- Ghosh C (2003). Healthy People 2010 and Asian Americans/Pacific Islanders: defining a baseline of information. *Am J Public Health*, **93**, 2093-8.
- Kem R, Chu KC (2007). Cambodian cancer incidence rates in California and Washington, 1998-2002. *Cancer*, **110**, 1370-5.
- Markowitz LE, Dunne EF, Saraiya M, et al (2007). Quadrivalent Human Papillomavirus Vaccine: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Recomm Rep*, **56**, 1-24.
- Matthews AK, Cummings S, Thompson S, et al (2000). African Americans and genetic testing for susceptibility to inherited cancers: use of focus group interviews to determine factors contributing to participation. *J Psychosocial Oncology*, **18**, 1-19.
- Morgan DL (1988). Successful focus groups. Newbury Park: Sage Publications.
- Morse JM (2000). Determining sample size. *Qualitative Health Research*, **10**, 3-5.
- Nguyen TT, McPhee SJ, Nguyen T, et al (2002). Predictors of cervical Pap smear screening awareness, intention, and receipt among Vietnamese-American women. *Am J Prev Med*, **23**, 207-14.
- Niedzwiecki M, Tuong TC (2004). Southeast Asian American statistical profile. Washington DC: Southeast Asian Resource Action Center.
- Parkin DM (2006). The global health burden of infection-associated cancers in the year 2002. *Int J Cancer*, **118**, 3030-44.
- Pope C, Mays N (1995). Reaching the parts other methods cannot reach: an introduction to qualitative methods in health and human service research. *BMJ*, **311**, 42-5.
- Ragin CC, Edwards RP, Jones J, et al (2009). Knowledge about human papillomavirus and the HPV vaccine - a survey of the general population. *Infect Agent Cancer*, **4 Suppl 1**, 1-10.
- Shefer A, Markowitz L, Deeks S, et al (2008). Early experience with human papillomavirus vaccine introduction in the United States, Canada and Australia. *Vaccine*, **26 Suppl 10**, 68-75.
- Sherris J, Friedman A, Wittet S, et al (2006). Education, training, and communication for HPV vaccines. *Vaccine*, **24 Suppl 3**, 210-8.
- Taylor VM, Schwartz SM, Jackson JC, et al (1999). Cervical cancer screening among Cambodian-American women. *Cancer Epidemiol Biomarkers Prev*, **8**, 541-6.
- Taylor VM, Seng P, Acorda E, et al (2009). Hepatitis B knowledge and practices among Cambodian immigrants. *J*

*Cancer Education*. **24**, 100-4.

Taylor VM, Yasui Y, Burke N, et al (2004). Pap testing adherence among Vietnamese American women. *Cancer Epidemiol Biomarkers Prev*, **13**, 613-9.

