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ORIGINAL ARTICLE

Role of men in promoting the uptake of HPV vaccinations: focus groups' finding from a developing country

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Abstract
Objectives Better outcomes of human papillomavirus (HPV) vaccination would be expected if men become full partners and advocates in vaccination initiative. Men involvement has important implication especially within the context that they are equally responsible for spreading the virus.
Methods Twenty-seven men took part in four focus group discussions carried out to assess men's attitudes toward the HPV vaccine between October and November 2007.
Results The results revealed that men have low awareness about the newly release vaccine and minimal knowledge of HPV and its association with cervical cancer. When provided with information, most men were in favor of protecting their spouses, partners, or daughters from cervical cancer using the vaccine. They were aware of the effects of men's risk behavioral patterns on women's risk for acquiring HPV infections. Many needed assurance about the vaccine's long-term safety and efficacy. They also expressed concern over the high cost of the vaccine. Men in this study played an influential role in the vaccination decision of their child and sexual partners. Many were in favor of male vaccination for cervical cancer prevention of their spouse or partner.
Conclusions Vaccine advocacy should put special emphasis on men as sexual partners, husbands, and fathers from a gender equality and partnership perspective. The findings are useful in facilitating the development of strategies for effective immunization initiatives.

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Introduction

During recent years, there has been a renewed recognition of the role and responsibility of men in sexual reproductive health of women, and the importance of including them in women's health development programs. Research has shown that better outcomes for women reproductive health programmes would be expected if men were involved (Dudgeon and Inhorn 2004). Studies have also highlighted that women often need the support of their husbands to attend reproductive health services and that the reproductive health of women is strongly linked to the knowledge, attitudes, and behavior of their spouses (Verma 1997; Bloom et al. 2000).

Likewise, in the context of the prophylactic human Papillomavirus (HPV) vaccine for cervical cancer prevention, men involvement may have important implication in women's vaccination initiatives. Vaccine delivery programme may be enhanced by involving men and motivate them to play more active and positive role in order to enhance the success and uptake of the vaccine. It is also important to include men in HPV education and prevention efforts, especially within the context that they are equally responsible for spreading the HPV, which may lead to cervical cancer in their female partners.

It has been a little more than 2 years ago since the prophylactic vaccine against HPV was licensed by the Food and Drug Administration (FDA) in June 2006 (Gardiner 2006). Until recently, the data about men's attitude toward the new HPV vaccine were scarce. The first vaccine for cervical cancer was approved in Malaysia in November 2006. Little is known about Malaysian men's

awareness and perception about the vaccine that aims to prevent cervical cancer in their daughter or spouse/partner. Since men are the key decision makers in the eastern societies like ours, it is prudent to discover their knowledge and attitudes in order to enhance their involvement in the vaccination initiatives. In addition, investigating men's attitude to HPV vaccination is of direct relevance for them too as the efficacy trial in boys is in progress and the vaccine may soon be available for boys if it is proven cost effective to vaccinate boys.

In Malaysia, the prophylactic HPV vaccine is recommended for routine use in girls aged 11–12 years, and permissive use for females aged 9–26 years. The administration cost (actual cost of the HPV vaccine plus vaccine administration cost) is approximately RM400 (US$114; 1 US Dollar = 3.5 Malaysian Ringgit) per dose. School-based immunization programs in Malaysia provide several free basic immunizations such as diphtheria–pertussis–tetanus, Bacille Calmette–Guérin, oral poliovirus vaccine, tetanus toxoid, and measles–mumps–rubella. However, the current programs do not include the new HPV vaccines and there is no HPV immunization program, which offers free or subsidized HPV vaccine. Between October and November 2007, approximately a year and half after the HPV vaccine was available on our market, focus group discussions (FGDs) were conducted to evaluate public knowledge, attitudes, and acceptance of the newly released HPV vaccine. A total of 114 people participated across 19 focus groups. Groups were segmented into groups of mothers with children eligible to receive the vaccine, young women eligible for vaccination, and adult men. We have published the findings from parents of vaccine-eligible daughters (Wong 2009) and young women (Wong 2008) groups, this article will report on findings of the adult men's perspectives.

Methods

Men between the ages of 18 and 55 years old were recruited via convenient sampling on a voluntary basis around Klang Valley of Malaysia. The group discussion begins with the assessment of awareness and knowledge of sexually transmitted diseases (STDs), HPV, and cervical cancer. Subsequently, the moderator read a brief excerpt about HPV and its link to cervical cancer, and the availability of the new HPV vaccination before proceeding to discussion about perception and acceptability of the preventive vaccine. The following was the excerpt that was read out across all the focus groups:

> "HPV, the abbreviation for human papillomavirus is the leading cause of cervical cancer in women. It also can cause genital warts, penile and anal cancer. HPV is sexually transmitted and most sexually active women will be infected with HPV at some time in their lives. Persistent infection can cause changes in the cells of the cervix and lead to cancer. HPV vaccine is now available. Studies to date found that the vaccine is safe with no serious side effect. The duration of protection is at least 5 years and studies are ongoing. The cost of the vaccine is approximately RM1,350 for 3 doses"

A semi structure focus group moderator's guide corresponding to the research questions were developed (Table 1). The guide was pilot-tested and revised, and final revision remains the same for all the focus groups. Before each group discussion, a written background survey questions was administered by participants to gather information about participants' demographic backgrounds. Group discussions were conducted in English, Bahasa Malaysia (Malaysian national language) or the respondents' native language (Cantonese and Mandarin). Discussions were conducted approximately 2 h, and were audiotaped and transcribed into English. Notes taken by the moderator and note taker were supplemented with the audiotapes to glean details from the discussion. All the focus groups were moderated by a sole researcher.

Consistent with grounded theory methods, data were collected until saturation was achieved. QRS NVivo qualitative software (QRS International Pty Ltd, Doncaster, VIC, Australia) was use for data analyses. Transcripts were analyzed using grounded theory approach where open-, axial-, and selective-coding procedures where adapted. The process of analyses first involved open coding where data were specific themes or categories were identified. Coding was performed by a single coder, thus, consistency of coding was assessed by intraobserver reliability. The coder coded the same data at various point in time and the agreement percentage was calculated. In this study, the intrarater agreement was in the 90th percentile range.

The study protocol was reviewed and approved by the Medical Ethics Committee, University Malaya Medical Center, Kuala Lumpur, Malaysia. All participants were informed about the objective of the study and written consent was obtained.

Results

Participants

Four focus group discussions were conducted, each composed of 6–8 multiethnic Malaysian men (total 27 participants). The demographic distribution of the study

Table 1 Focus group guide

Issues	Questions and probes
Knowledge of knowledge STI	What are the types of STIs that you know?
	Have you heard of genital warts?
Knowledge of HPV infection	Have you heard of the human papillomavirus or HPV?
	Do you know if it is an STI?
Knowledge of cervical cancer and associated risk factors	What do you know about cervical cancer?
	Do you know the causes for cervical cancer?
Awareness of the new HPV vaccine	Have you heard about the new HPV vaccine to protect women against cervical cancer?
	If yes, how did you hear about the vaccine?
HPV vaccine acceptability	Would you get your young daughter vaccinated against HPV?
	If no, why? Probes: perceived not at risk of infection, perceived sexually active or promiscuous, cost, embarrassment, safety and efficacy
	The vaccine may also protect men against rare genital cancers and genital warts. However, the efficacy trials in young men are ongoing. Currently the vaccine is only recommended for use by women
	If the vaccine is available for boys or men, would you willing to receive a vaccine to protect your partner/spouse against HPV infection?
Vaccination decision	Who make decision whether to vaccinate your child?
Physician recommendation	How concerned are you about physician recommendation as a key role in HPV vaccine delivery?
Vaccine mandatory	How do you view making HPV vaccine mandatory?

sample is shown on Table 2. The mean age of the sample was 28.2 years (SD $\pm$ 9.1), most of them had at least a high school education. The majority of the young participants were university students (44.4%). The groups also comprised of employed men in either professional, managerial, administrative and management, or unskilled workers. Participants were recruited from multiple sources and through a variety of strategies from urban and suburban area in Klang Valley of Malaysia. Thus, the sample may not be representative of the population. Eight of the nine married participants have children, and all have at least one daughter except one participant.

Knowledge about STDs, HPV, and cervical cancer

When the participants were brought into discussion about knowledge of types of STDs, the most commonly identified types STDs were HIV/AIDS, syphilis, and hepatitis B. Many respondents across the groups have never heard of genital warts or HPV infection. They were also not aware that HPV infections are associated with cervical cancer. Only three unmarried young participants correctly identified persistent HPV infection as the cause of cervical cancer.

None of the participants, including those that have heard of HPV, aware that HPV infection is common. Many were also not aware that it is acquired sexually. Overall, participants noted that they have been poorly educated about HPV and express great desire for more information HPV infection, prevention, treatment, and the risks associated with HPV infection. Across all the groups, knowledge and awareness were slightly better among younger participants and those with higher educational levels, income, and occupational level.

Knowledge of the new HPV vaccine

The knowledge and awareness of the availability of the new HPV vaccine was very limited, even among the well-educated. When they were questioned if they have heard of the new HPV vaccine or vaccine that protect women against cervical cancer, the majority indicated that they were not aware of its availability ($n = 24$, 88.9%). Those that were aware of the vaccine cited that they read about the vaccine from press material (newspaper and magazine) and Internet. Generally, the groups felt that the new HPV vaccine has been given little publicity.

Acceptability of HPV vaccine

Married participants, particularly with children, expressed desire to know where they can obtain the vaccine and intended to vaccinate their children as illustrated in the comment, "As you said the infection is very common, I will let my daughter take this vaccine." When further queried whether they mind receiving a vaccine that targeted to protect women from cervical cancer, majority of participants ($n = 20$, 74%) was in favor of men receiving the HPV vaccine. Respondents of various age groups and ethnicities viewed that men should have their part of

Table 2 Characteristic of focus group participants ($n = 27$)

Characteristic	No. of participants (%)
Age (years)	
<30	20 (74.0)
30–40	4 (14.8)
41–50	2 (7.4)
>50	1 (3.7)
Marital status	
Married	9 (33.3)
Not married	18 (66.7)
Race/ethnicity	
Malay	8 (29.6)
Chinese	10 (37.0)
Indian	9 (33.3)
Religion	8 (29.6)
Muslim	9 (33.3)
Buddhist	1 (3.7)
Taoist	6 (22.2)
Hindu	2 (7.4)
Free thinker	1 (3.7)
Highest educational attainment	
Secondary school	6 (22.2)
College/University	18 (66.7)
Postgraduate	3 (11.1)
Average household income in Ringgit Malaysia (1US Dollar = 3.5 Malaysian Ringgit)[a]	
<RM2000	18 (66.6)
RM2000–RM4000	76 (25.9)
>RM4000	2 (7.4)
Occupation	
Professional	2 (7.4)
Managerial	3 (11.1)
Semi-professional	5 (18.5)
Skilled worker	8 (29.6)
Student	12 (44.4)

Values in some categories do not sum up to 100% due to rounding. All values are based on participant self-reporting

[a] Average household income in Malaysia reported in the Mid-term Review of the Ninth Malaysian Plan 2006–2010 was RM3,686 (Economic Planning Unit, Prime Minister's Department, 2008)

responsibility when it comes to prevention of a disease that men are responsible in its transmission. Once informed by the moderator about the HPV infection is common, many unmarried young men expressed desire to receive the vaccine for their own protection as well as protecting their future spouses if the vaccine is available for men. As illustrated by a participant, "I think we all should take, because we don't know if our future partner is infected. Most important is to protect myself and future my wife." Some single men noted that they would consider encouraging their partner to get the vaccine in future. Many also expressed that they were not embarrassed to seek for a vaccine that aimed to protect their partner for cervical cancer. These were illustrated in the following statements.

> "Well, from what you told us, it may affect the men, the men can pass it to their partner, so I don't mind if the vaccine is available for men."

> "Yes, sure I don't mind. One day I will get married, and surely I don't want my wife to get cancer and die."

> "I am afraid of both getting the infection myself, and also I want to protect my future wife."

> "I am no embarrassed, this is for my own benefit."

Nonetheless, not all participants agreed that immunization should be targeted at both genders. Two participants viewed that only women should receive the vaccine within the context that HPV may lead to cervical cancer in female. "This is not chronic infection, like hepatitis vaccine I will definitely take. We don't get cervical cancer. So, I think just focus on women only." Another married respondent added, "I will let my daughter take it but not my son."

Almost all of the married respondents noted that the administration of the vaccine was inappropriate for pre-adolescents. When asked about the preferred age to vaccinate their child, participants preferred to vaccinate older rather than younger children. They expressed concern about giving their children a vaccine that is not considered relevant to their current situation, which is being not sexually active. Vaccination was more acceptable for children above 15 years of age, as noted by a respondent "It should be administered like 15 or 16 years of age, I think it is best age, not too young, when they know nothing."

When probed, majority did not think the HPV vaccine promotes promiscuity. One unmarried young man noted "The vaccine is nothing more than just to protect oneself, there are so many other STDs. I personally may want to find out my partner, if I have one in future, whether she has received the vaccine. I will prefer if she gets the vaccine." Another single man added, "Make it like the compulsory HIV test before marriage, get couple to test for HPV. I think better both go for vaccination before marriage."

Safety and efficacy of the HPV vaccine is an important factor in their consideration for self and child vaccination. There were concerns over whether the vaccine has been around long enough for its long-term safety to be established. Majority felt that they needed more information on safety, efficacy, and possible immediate or long-term side effects. Many reported that if the HPV vaccine were safe, they would certainly give it to their child. Some noted that since little publicity have been given to the vaccine, it

could imply that it is unimportant. "Unless I hear a lot of people talking about it, you know like the media, then I start give to my child."

Participants who did not support HPV immunization cited reasons relevant to their low risk of contracting the infection because of their lifestyles and not being sexually active. "This is not chronic infection, like hepatitis vaccine I will definitely take. If you think you are clean, I think no need". Another participant added, "As a man, we know our lifestyles, it depends on the lifestyle, if you know you are good, then what for taking the vaccine. I don't see the need." A rather conservative Muslim participant viewed uphold of religious and moral value and family teaching as replacement for the vaccine. "We know from the beginning the cause of this disease, so we teach them to avoid from early age. I think no need this vaccine. Have to see the family history, but in the past, none of my family member has this cancer."

When probed whether they concern that inoculating their child against a sexually transmitted disease is likely to send wrong message about consent of premarital sex or early sexual debut, the majority denied the fact, saying that HPV vaccine does not protect against other types of sexually transmitted diseases. They felt that parents should confront their child about the limited protection the vaccine could offer, and subsequently provide them with strong moral education and upbringing. As illustrated by a participant, "You have to tell them what is out there, the vaccination is basically for prevention only. The value that you teach them hopefully they will hold to it."

Almost all participants cited that the high cost of the vaccine is the key barrier to vaccination. "Yes, cost is the main consideration factor to vaccinate my child. This price, if for general Malaysian, how many can afford near RM1300. What about those with many children?" Another unmarried young man noted "Considering the high cost, if the vaccine is available for men, I will not take now, maybe cheaper in future. I will take just before I am sexually active." Nevertheless, to a minority participant, price was not an issue "What I am more concern is actually not the price. It is about what is the outcome. Because now the thing is like in the process being assessed. Duration of protection, safety and all those are not fully known." Many hope that the government would subsidize the vaccination in order make the vaccination more affordable.

Men's dominant role in vaccination decision was prominent as majority of the married men, regardless of ethnicity and educational level, felt that they should make the decision in vaccination or at least be informed of HPV vaccination for their spouses or children, as illustrated by a respondent "The women have to get our permission or inform us, this is big decision, especially since it involves money in the family, we have to know". Another respondent cited "Usually, my wife will ask my permission, for this vaccine, I need to know the statistic, the trend of the disease before I decide to give to my children. Now, I don't know much about it."

When asked how they would feel upon receiving a recommendation from physicians to vaccinate their child, the majority in favor of physician recommendation in providing up to date knowledge to them. "People like us, we didn't read much, they should tell us, recommend." Nevertheless, a number of contrasting views were received as some viewed physician recommendation of an STD vaccine as intrusive or sensitive. This was illustrated by the comment, "They should make publicity first, then we are not so shock, as if we look so bad." Some perceived physician recommendation as pushing the vaccine for profit. "I will feel like the doctor want to earn money from me. I don't like. I think they better put posters, while we are waiting, we can see."

The view about mandatory vaccination received mix perspectives. Supporters of the mandatory vaccination pointed out that mandatory inoculation could help public to overcome barriers to access. While others contended that protection from a sexually transmitted virus would encourage promiscuity among adolescents. There were suggestions that mandatory should couple with an option for parental refusal, as to give parent a choice whether to vaccinate their daughters based on philosophical, religious, or medical reasons. Some conservative participants stressed on imparting proper education against premarital sex, high religious, and moral values as alternative to mandatory immunization.

Discussion

The focus group discussions were undertaken approximately a little more than a year after the HPV vaccine was released in the country. Although the HPV vaccine has been available more than a year, the knowledge of both HPV infection and the HPV vaccine remains sparse on men across all groups, regardless of educational levels and ethnicities. The results of this study supported past studies that showed knowledge of HPV, cervical cancer and its associated risk factors were generally low among men as well as women of the general public (Waller et al. 2004; Marshall et al. 2007; Marlow et al. 2007). Our results indicate that men need more information in order for them to be aware of the importance of HPV vaccination. Immediate action such as a HPV educational campaign to reach out men, to enhance their knowledge and awareness in order to be more receptive to the new vaccine is warranted. Additionally, media publicity about the quadrivalent HPV vaccine is important as lack of publicity

may implicitly suggest to many, even when recommended by physician, that it is not important.

Men in this study aware that the effects of men's risk behavioral patterns on women's risk for acquiring HPV infection. As much as possible, men wanted to protect themselves and well as their partners. Many were in favor of male vaccination for cervical cancer prevention of their spouse or partner. Thus, this may indicate that male vaccination is likely to receive favorable responses when it is available for men in the future. A minority that resists receiving the vaccine that protects their spouses or partners against cervical cancer failed to see the important implication of their role and responsibility in HPV prevention. The International Conference on Population and Development (ICPD, 1994) Programme of Action (United Nations 1995) insisted upon gender equality and to encourage and enable men to take holistic approach in sexual and reproductive healthcare and prevention of sexually transmitted diseases for both men and women. In congruence to HPV vaccination, it is thus vitally essential to build on men's participation in vaccination to protect their spouse or partner against cervical cancer.

Similar to findings from other studies (Zimet et al. 2000; Mays et al. 2004; Dempsey et al. 2006), parents in this study were less likely to favor vaccinating children of younger age. Their major concern of child vaccine was the safety, efficacy, and possible long-term side effects of the vaccine in consideration that it is a new vaccine and recommended to children at a vulnerable young age. Likewise, these factors have been found to be important determinants in other studies (Zimet et al. 2005; Gerend et al. 2006).

Malaysia is ethnically diverse with a majority Malay and other ethnicities (mainly Chinese and Indian, and other minority ethnic groups). Based on the Department of Statistics Malaysia in 2008, The Malays who are predominantly Muslims comprised 50.8% of the population (estimated at 27.7 million). In turn, the Chinese Malaysians (who are primarily Buddhist, although smaller proportions of them are Christian, Taoist, or followers of Confucianism) make up 23.0%, and a largely Hindu Indian Malaysian population makes up 6.9% of the population. The non-Malay bumiputra, other ethnic groups, and non-Malaysian citizen make up 11.0, 1.2, and 7.1%, respectively. In this study, fear that HPV vaccine will promote promiscuity appeared not a major barrier to vaccination except for the Muslim Malays. In our predominant Muslim society, there exists a strong perception that the vaccine is not relevant to their adolescent children at current comment as they have faith that their children have been given proper religious education and moral values, thus are not likely to be sexually active at young age. Similar to our previous study assessing maternal perceptions (Wong 2009), many participants in this study indicated their preference to vaccinate child of age above 15 years, the age close to the legal minimum age for marriage under the Malaysian civil Law Reform Act, which set the minimum age of marriage to 16 years for women and 18 years for men. It seems that majority believed that their children will remain abstinent (and therefore uninfected) until they reach an age of marriage. Parents should be made known that despite the domination of conservative and traditional values in our society, local studies revealed that dating and engaging in sexual activities among adolescents is common (Huang 1999). It has been suggested that clear communication is key to making parents understanding the reason for vaccinating children at young age (Waller et al. 2006). Thus, in local context, communication strategy should impart a thorough understanding of the importance for their child to get HPV vaccine before their first sexual contact. Educational efforts should also attempt to minimize stigma and misunderstanding about HPV, stressing that unlike many other STIs, HPV infections are extremely common, most infections are asymptomatic, and most importantly transmission is possible even in the absence of intercourse.

Physician recommendation has been indicated as the key factor for successful HPV vaccine uptake (Holcomb et al. 2004). Although men viewed physician recommendation positively, a minority perceived physicians' recommendation inappropriate with regard to the sexual nature of the vaccine. As such, having posters in the clinic waiting rooms might be an important component of HPV vaccine publicity to support physician recommendations. Additionally, it is upmost important for recommending physicians to provide information in an individualized manner, tailoring recommendation approach according to the cultural background, education, and religious beliefs especially in multiethnic society.

The vaccine is the most expensive of all recommended childhood vaccine. Even in the west, the cost of the vaccine was barrier to HPV vaccination (Davis et al. 2004; Zimet et al. 2005; Olshen et al. 2005). In the local context, at the current price, the vaccine would be fairly expensive for low-income families in this country to provide this vaccine for their daughters. The high cost of the vaccine may be perceived to outweigh the benefit to individual, particularly for those of lower income groups and especially family with many children. Parents were more likely to opt out of giving their daughters the vaccine. There is no public source of funding for HPV vaccines at this moment; hence, there is a need to establish a vaccine assistance program for low-income groups. In our previous reports, mandatory vaccination may benefit the lower-income groups but may be controversial among the conservatives (Wong and Sam 2007; Wong 2009).

Although the majority of participants expressed a high acceptance for the HPV vaccine, there is a strong

traditional value of higher social economic power in men compared with women. Men's attitudes toward vaccination are important since majority men are the breadwinner and dominant decision makers in a family. Men often dominate decision-making in the family, thus, they may have enormous influence on HPV vaccine initiation. Women need their support and encouragement in vaccination initiative, as well as financial assistance and permission for vaccination as men are often the ultimate decision-makers. Hence, promoting public awareness on HPV vaccine should not target on women alone. Vaccine delivery programme should involve men and motivate them to play more active and positive role in order to enhance the success and uptake of the HPV vaccine among women and children.

The study has several limitations, suggesting that the results should be interpreted with some caution. First, all information obtained from the interview was self-reported and reporting bias due to socially desirable attitudes and behaviors might exist. Second, female researcher moderating male participants may further add to reporting bias especially in discussion pertaining to sensitive issues. Third, coding performed by single coder may result in investigator bias and error in coding. Additionally, in light of the small focus group size and possible bias involved in numerous participation from the university settings, so caution is advised in inferring these results to the broader population. Last, this focus group study was not designed for generalization. The qualitative approach used allows the generation of themes and illustrates the thoughts and concerns of men regarding the new HPV vaccine. Despite these methodological caveats, the findings provide insights into future research, and educational and communication efforts aimed to achieve successful HPV vaccine delivery programs to optimize vaccine uptake.

In conclusion, women should not be the principal targets in HPV vaccine promotion. With regard to men involvement, it is no longer the question of whether to involve them, but rather how to involve them. Men play an influential role in the vaccination decision of their child and sexual partners. They were more prone to accept vaccination if they had more information about susceptibility of HPV infection in young people and the important role of HPV in cervical cancer. Clearly, the introduction of the vaccine must therefore in concordance with public's awareness and knowledge before vaccination is pushed forward. Nationwide publicity of the HPV vaccine is upmost important. Special efforts should be made to emphasize men's shared responsibility and promote their active involvement. Vaccine advocacy should put special emphasis on men as sexual partners, husbands, and fathers from a gender equality and partnership perspective.

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