



Assessment of Knowledge and Attitude regarding Human Papilloma Virus Vaccination among Preclinical Medical Students in the Malaysian Military University

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ABSTRACT

Human papillomavirus (HPV) causes cervical cancer and sexually transmitted infections. Cervical cancer is the third most common malignancy among the women worldwide. The primary tool for prevention of cervical cancer is through the HPV vaccination. Pre-clinical year medical students must have background knowledge about HPV vaccination as they become healthcare providers, who will play an important role in influencing patients' decision to receive vaccination. If their knowledge on the HPV is low this will result in poor attitude towards its prevention. This study was aimed to determine the knowledge of HPV vaccine and cervical cancer as well as the acceptance of HPV vaccination among pre-clinical year medical students. A descriptive cross sectional study was conducted among 83 pre-clinical year medical students in National Defence University of Malaysia (NDUM). A set of self-administered questionnaire was distributed to the respondents to gather the data. Although almost half of respondents (46.3%) did not know the exact indication for HPV vaccination Most of them perceived that HPV vaccine can protect against the cervical cancer (64.4%) and it is as important as Hepatitis B or Haemophilus influenzae vaccines in Malaysia (54.9%). Substantial proportion of the respondents (47.6%) disagreed that HPV vaccination will diminish the need for annual Pap smear testing. The findings of this study show that being a pre-clinical year student does not warrant good knowledge and prevention of HPV infection. There is a need to obtain more information about HPV vaccination effects on cervical cancer in their medical school teaching and from the social media.

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Introduction

Human papillomavirus (HPV) is one of the causes of cervical cancer and sexually transmitted infections. Cervical cancer is the third most common gynaecological cancer among the women worldwide including Malaysia (WHO, 2010). HPV is transmitted via sexual contact, including by having vaginal, anal, or oral sex with an infected person ("Genital HPV infection", 2016). Many studies have stated that the causative HPV types 16 and 18 are responsible for cervical cancer. Delphine, Silvia & Martyn (2008) also mentioned the considerable association between incidence of cervical cancer and prevalence of high-risk HPV

infection. The primary tool for prevention of cervical cancer is through the HPV vaccination. It is believed that HPV vaccines can effectively protect against cervical cancer, vaginal cancer, vulvar cancer, genital warts and other sexually transmitted infections (“HPV Vaccine Information for Young Women ...”, 2016). The Center for Disease Control and Prevention has recommended that both female and male should receive the HPV vaccine from the age of nine until the age of 26 years old for female and 21 years old for male (“HPV vaccines-questions and answers”, 2016).

HPV vaccine was available since 2006 in Malaysia, and full implementation of vaccination program in public sector was done in year 2011 among 13 years old girls in schools. Annual Report of the Malaysian Ministry of Health (Malaysia MoH, 2012) revealed that the immunization coverage among girls aged 13 years old was 87.12% for 3 complete dosages of HPV vaccine. However, men from the high risk groups have to pay on their own merits to obtain the HPV vaccines in the private sector health market. In Malaysia, the disability, sexual dysfunctions and impairment of quality of lives in men have not been explored (Wan Puteh et al., 2013). If the knowledge on the HPV is low, this will result in poor attitude towards its prevention. The acceptance of the HPV vaccine might be influenced by factors which affect the decisions of individuals on whether they should be or should not be vaccinated (Chiang et al., 2016).

In the National Defence University of Malaysia, Medical Doctor program is divided into pre-clinical years (year 1 and 2) and clinical years (year 3, 4 and 5). Pre-clinical years are important for medical students to learn basic medical sciences to gain the good background knowledge. Pre-clinical year students must have accomplished knowledge about HPV vaccination as they soon will become clinical year students and then healthcare providers. This study was aimed to determine the knowledge and attitude of HPV and cervical cancer as well as the acceptance of HPV vaccination among pre-clinical year medical students.

Materials and Methods

i. Study Design

This is a cross-sectional survey that was conducted in the National Defence University of Malaysia.

ii. Sampling Method

Convenience sampling was conducted to recruit the 83 pre-clinical year medical students for this study. A set of self-administered questionnaires was distributed to participants and collected after their lectures during school days.

iii. Instrument

The questionnaire was designed to collect data according to focus areas: (1) Basic information on their socio-demographic characteristics and academic year; (2) Their knowledge and attitude of HPV and cervical cancer, and the acceptance of HPV vaccination.

iv. Data Analysis

Descriptive analysis was conducted for socio-demographic variables, and to describe medical background of the students and their attitudes, knowledge, and acceptance of HPV vaccination. All of the statistical analyses were conducted using SPSS version 22 (IBM, 2013).

v. Ethical Considerations

The participants were well informed of the purpose and contents of the study and they were given a consent form and an information sheet to sign for their voluntary participation and freedom to withdraw from the study.

Results

Socio-Demographic Characteristics

Table 1: Socio-demographic profile of respondents (n = 83)

Socio-demographic characteristics		Frequency	Percentage
Gender	Male	44	53.0
	Female	39	47.0
Race	Malay	53	63.9
	Indian	22	26.5
	Chinese	8	9.6
Year of study	Year 1	44	53.0
	Year 2	39	47.0
		Mean	± SD
Age	(year)	19.0	1.6

Table 1 shows that more than half of the subjects were male (53.0%) respondents. The mean age of them was 19.0 ± 1.6 years. Most of the participants were Malay (63.9%).

Table 2: Knowledge and attitudes regarding human papillomavirus vaccine (HPV) and acceptability by pre-clinical students

Questions	Response	
	n	%
1 Do you know the indication of HPV vaccine?		
yes	44	53.7
no	38	46.3
2 To people of what age is HPV vaccine indicated?		
below 10	8	9.9
10 and 15	36	44.4
15 and 18	19	23.5
18 and above	18	22.2
3 Who should receive HPV vaccine based on cost/benefits?		
females	51	62.2
both	31	37.8
4 Do you know that MOH offers HPV vaccine to 13 years old girls for free in Malaysia?		
yes	53	63.9
no	30	36.1
5 HPV vaccine strengthens the immune system		
neither agree nor disagree	8	9.6
tendency to agree	69	83.1
tendency to disagree	6	7.2
6 HPV vaccine won't cause undesirable side effects		
neither agree nor disagree	37	45.1
tendency to agree	23	28.0
tendency to disagree	22	26.8
7 The use of condoms won't diminish after vaccination with HPV vaccine		
neither agree nor disagree	37	45.1
tendency to agree	27	32.9
tendency to disagree	18	22.0

Questions	Response	
	n	%
8 HPV vaccine is as (or more) important as vaccines against Hepatitis B or <i>H. influenzae</i>		
neither agree nor disagree	24	29.3
tendency to agree	45	54.9
tendency to disagree	13	15.9
9 Adolescents could receive other vaccines at the same medical consultation		
neither agree nor disagree	24	29.3
tendency to agree	46	56.1
tendency to disagree	12	14.6
10 HPV vaccine will diminish the need for annual Pap smear testing		
neither agree nor disagree	39	47.6
tendency to agree	18	22.0
tendency to disagree	25	30.5
11 Do you think HPV vaccine should be compulsory for all adolescent females?		
yes	64	78.0
no	5	6.1
don't know	13	15.9
12 Do you think HPV vaccine can protect against the cervical cancer?		
neither agree nor disagree	23	28.0
tendency to agree	53	64.6
tendency to disagree	6	7.3

According to our results in Table 2, not many respondents were aware about the indication of HPV vaccination (46.3%). However, most of them perceived that HPV vaccine can protect against the cervical cancer (64.4%) and it is as important as Hepatitis B or *Haemophilus influenzae* vaccines in Malaysia (54.9%). Almost half of students thought that HPV vaccine is indicated between the age of 10 and 15 years old. The majority of students (62.2%) perceived that the females should receive HPV vaccine based on cost/benefits. Most of the students (63.9%) knew that the Malaysian Ministry of Health offers HPV vaccine to 13 years old girls for free of charge. The respondents have a tendency to agree that adolescents could receive other vaccines at the same medical consultation (56.1%).

The majority of the students (78%) thought that HPV vaccination should be compulsory for all adolescent females. Nevertheless, the large proportion of them disagreed that the HPV vaccination will diminish the need for annual Pap smear testing (47.6%). Almost half of pre-clinical year medical students (45.1%) intend to disagree that HPV vaccine won't cause undesirable side effects. However, the majority of students (83.1%) tend to agree that HPV vaccine can strengthen the immune system. (Table 2)

Discussion

In our study, the results indicated that not many respondents were aware about the indication of HPV vaccination (46.3%) which is consistent with the following research findings. A study among the girls aged 15–16 year old that had been vaccinated against HPV in England indicated that more than half of them had lack of knowledge about HPV vaccination, and the need for future screening (Bowyer, Marlow, Hibbitts, Pollock & Waller, 2013). Recent studies from Korea and Nigeria showed that female undergraduate students had inadequate knowledge about HPV and vaccination against it (Kang & Kim, 2011; Makwe, Anorlu & Odeyemi, 2012). The study of Reimer, Schommer, Houlihan & Gerrard (2014) mentioned that the knowledge and awareness about HPV and the vaccine against it in males were less than in females. According to the study among undergraduate students in Hong Kong, the knowledge of undergraduate students concerning HPV infection and HPV vaccination rate among them was low (Chiang et al., 2016). Specifically, male students had poorer knowledge and attitude than female students.

Contrary to our findings, the study carried out among students from two well-established universities in Malaysia by Rashwan, Saat & Manan (2012) found that the level of knowledge about HPV infection, cervical cancer and preventive measures against it was high. Medical students' knowledge of HPV and HPV vaccination was significantly associated with their acceptance of vaccination.

The acceptance of the HPV vaccine in the community is one of the most *important* factors affecting the immunization coverage which has to be addressed as a perceived barrier in future educational programs. Based on our findings, the majority of students (78.0%) thought that HPV should be compulsory for all adolescent females and most of the students (83.0%) tend to agree that HPV vaccine can strengthen the immune system. According to previous research, similar results were found whereas both males and females demonstrated knowledge about cervical cancer as a cause of death in women, and stated that they should take the vaccination. Thus, Songthap et al. (2009) found that about 65% of males agreed that it was important to be vaccinated against HPV before becoming sexually active. However, only a quarter of them (25.3%) were willing to do so. In Hong Kong, despite low HPV vaccination rate, the women and adolescent girls generally had a favorable attitude towards HPV vaccination (Kwan et al., 2008). In another research, the study population were adolescent girls aged between 13 and 21 years old and the majority of them perceived that cervical cancer was a preventable illness and one-third of the participants were willing to take vaccination to protect its occurrence (Lee, Ho, Cheung & Keung, 2014). However, only 6.7% of them had actually received the vaccination and around 60% were still in the stage of observation (Lee, Ho, Cheung & Keung, 2014). The study of Wang et al. (2014) focused on the perceptions of HPV vaccination among the adolescent girls. It was found that they intended to receive the HPV vaccination to prevent cervical cancer as they accepted the effectiveness and safety of the HPV vaccine.

Limitations

There are some limitations in this study. We used the convenience sampling and all the respondents were from pre-clinical students of the same university. The results may not be representative enough for the findings to be generalizable to the entire medical students' population (Aronson, Wilson & Akert, 2013). Also, we did not account for the family history of cervical cancer or other sexually transmitted infections among the respondents. Having such family history may have changed the respondent's perception and attitude towards the HPV vaccination. Finally, this study is more focused on examination of knowledge and attitudes of the participants toward HPV vaccination than the acceptance of HPV vaccine which could be further considered in future research.

Conclusions

The knowledge of pre-clinical year medical students concerning HPV vaccination is relatively low. There is a need to obtain more information about HPV vaccination effects on cervical cancer in their medical school teaching. Additionally, information about HPV vaccination may be delivered through television channels and online social media. The health promotion activities should focus not only on prevention of the cervical cancer but also emphasize HPV vaccination in male. The findings on attitude and acceptance of HPV vaccine among our respondents were controversial. We need further studies including both pre-clinical and clinical year students from other medical universities to investigate the factors affecting the attitudes towards HPV vaccination in Malaysia.

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