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KNOWLEDGE REGARDING HUMAN PAPILLOMA VIRUS (HPV) INFECTION AND VACCINE AMONG HEALTH SCIENCE UNDERGRADUATE STUDENTS IN PUBLIC UNIVERSITY MALAYSIA

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Abstract: Human Papillomavirus (HPV), a sexually transmitted virus, is linked to genital warts and cervical cancer. Despite of the availability of HPV vaccination as the primary preventive method against HPV infection, the level of knowledge and understanding about HPV infection and vaccine varied. The aim of this study was to determine the level of knowledge and attitudes towards HPV infection and vaccine among health sciences undergraduate's students inpublic university Malaysia. This was a cross-sectional study and 251 students were recruited using stratified random sampling methods. The results show that only 42.6% of the respondents had good knowledge regarding HPV infection and vaccination. Conclusion: More than half of the respondents still have poor level of knowledge regarding HPV infection and vaccine Hence, these findings indicate that there is a need for more health education and promotion programme regarding HPV infection and its vaccine among the population studied to further enhance their knowledge and attitude.

Keywords: knowledge, Human Papillomavirus (HPV), students.

INTRODUCTION

Cancer is a leading cause of premature death worldwide, especially in women. Every year, more than two million women worldwide are diagnosed with breast or cervical cancer(Ginsburg et al., 2017).Cervical cancer ranks as the fourth most frequent cancer among women in the world and current estimates indicate that every year 527,624 women are diagnosed with cervical cancer and 265,672 die from the disease (Bruni et al., 2017). In 2012, cervical cancer was responsible for the deaths of 266 000 women worldwide(Ferlay et al., 2015). Human papillomavirus (HPV) is a well-established cause of cervical cancer(Bruni et al., 2017)with over 40 types being able to infect the anogenital region of both sexes (Little, Ogilvie, & Mirwaldt, 2015).

Human papillomavirus (HPV) is an infection that can be sexually transmitted and result in health consequences including genital warts and cancers.(Valentino & Poronsky, 2016).The most common HPV-associated cancer is cervical cancer among women and oropharyngeal cancers among men (CDC, 2017). HPV is generally classified into low-risk types and high-risk types (Elbardiny, Nor Afiah, &Salmiah, 2014). Worldwide the high-risk types 16 and 18 accounting for over 70% of all cases (Bruni et al., 2017). Most sexually active women and men will be infected with HPV at some point in their lives and majority of HPV infections do not cause symptoms or disease and resolve spontaneously (WHO, 2016). However, persistent infection with specific types of HPV especially HPV 16 and 18 may lead to precancerous lesions and if untreated, these lesions may progress to cervical cancer (WHO, 2016). As a preventative measure, vaccines against HPV 16 and 18 have been approved for use in many countries and given to girls.

The vaccine to protect against infection HPV became available more recently in 2006 (Valentino & Poronsky, 2016). Malaysia is the first South-East Asia country to implement national HPV vaccination programme(Juni, 2014) whereby HPV vaccine was introduced in 2010, targeting girls aged 13 years on 2010(Markowitz et al., 2012)but the knowledge and awareness of the people especially among young population regarding HPV vaccination still poor(Zaridah, 2014).Various studies conducted among university students and public in Malaysia reported that overall knowledge on HPV infection and vaccination is still poor (Elbardiny et al., 2014;

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Kwang et al., 2014).Sexually active adolescent and young adult females are at a higher risk to acquired HPV infection compared to women greater than 25 years of age and men(Valentino & Poronsky, 2016). University students falls into these age group and they are at risk. Therefore, there is a need to assess the current knowledge regarding HPV infection and vaccine among university students. The finding of the study will provide baseline data regarding knowledge on HPV infection and vaccine among university students and to plan further vaccination intervention to reach young people effectively in order to increase vaccination rate and prevention of HPV related cancers.

MATERIALS AND METHODS

It was a cross-sectional study design and the study was carried out among 251 health science undergraduate students in public university, Malaysia. from September 2015 until June 2016. A stratified random sampling method was used to select the respondents. A self-administered questionnaire was used for data collection. This questionnaire was adapted from the previous study (Al-Dubai et al., 2010; Juntasopeepun, Davidson, Suwan, Phianmongkhol, & Srisomboon, 2011; Maharajan, Rajiah, Num, & Yong, 2015).The structured questionnaires comprised of three parts A and B to obtain information regarding socio-demographicincludes awareness and source of information regarding HPV infection and vaccination and knowledge regarding HPV infection and vaccine respectively.

There was a total of 18 questionstoassess knowledge on HPV infection and vaccine**.** Each question had three choices as respondents need to choose true, false and do not know. A correct answer was given '1' mark and for wrong and 'do not know' answer '0' mark was given.The scores are summed up and was subsequently subdivided into 2 categories: poor (score < 11), and good (score≥11).The pre-test was conducted among undergraduate at another faculty and the Cronbach's Alpha results was 0.80.

Data were analysed by using Statistical Packages for Social Sciences (SPSS) version 20.0. Descriptive analysis was used to describe the social-demographic characteristics,awareness and sources of information about HPV and vaccine, and the level of knowledge regarding HPV and vaccine.
The ethical approval and permission for this study were obtained from the University Ethics Committee.

RESULTS AND DISCUSSION

The response rate for this study is 100%. Majority of respondents were Malays (82.1%), age 22 years old and below (72.5%), and female (85.3%) (Table 1). Majority of the respondents (93.2 %) had heard of HPV infection and vaccination but only 52.6% had taken the HPV vaccine (Figure 1). The main sources of information about HPV vaccine were the internet (66.5%) and followed by health care provider (57.0%) and school/university (47.0%) (Figure 2). This indicate that studentsspend most of their time on the internet for latest information. Therefore, effort should be made to disseminate more updated and verified information regarding HPV infection and vaccine through formal, reliable and safe websites to enhance the knowledge and awareness of younger generation (Kwang et al., 2014).This could help youth to take HPV vaccination as a prevention from HPV related cancer.

Overall, this study showed 42.6% of the respondents had good knowledge towards HPV infection and vaccine with the median score is 10 (IQR= 5) (Table 2).This study results similar with study done by Elbardiny et al., (2014), among 450 staff in public university in Malaysia, reported only 45.8 % of respondents had good knowledge. On the other hand, this study finding are had a better results compare to study done by Kwang et al. (2014), among pre-university programme students which reported that only7.5% of the respondents exhibited good knowledge with another 43.6% moderate knowledge and 48.9% poor knowledge. However this finding was contrasts with study done by Juni (2014),among 349 first-year female undergraduate students who reported 52% of their respondents had good knowledge regarding HPV vaccination and Rashwan, Saat, & Abd Manan (2012),in a study among 305 Malaysian students in two universities who reported that 55% of their respondent had a high level of knowledge on HPV infection, cervical cancer, and preventive measures against. This study results also reveal that the respondents still lacking of knowledge on most of the important facts about HPV infection and vaccination which might have contribute topoor knowledge (Table 3) which include only 40.2% of the respondents aware thatpeople HPVcan be transmitted to their partner even if they do not have symptoms of HPV infection,only 39.4% know that most people with genital HPV infection have no visible signs and symptoms, only 33.9% of the respondents know that HPV can infect both sex, 45% of the respondents aware that genital warts caused by HPV,only 29.9% of the respondents know that the HPV vaccine does not protect against all types of the virus that causes cervical cancer and only 39.0% of the respondents know that the HPV

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vaccine does not protect against other sexually transmitted infections like HIV and only 44.6 % of the respondents know that HPV vaccine is effective if given to people who have never had sex . Hence more efforts should be made to improve the knowledge regarding HPV infection and vaccine among young adults.

Conclusion

Generally,only 42.6% of the respondents had good knowledge regarding HPV infection and vaccination. Being the high risk group and the future generation who responsible to educate the public(Rashwan et al., 2012), thus there is a need to further enhance the knowledge of the respondents towards prevention of HPV infection and uptake of HPV vaccination. The knowledge can be further improved by organizing educational and awareness programs with the active involvement of health care personals.

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LIST OF TABLES

Table 1: Socio-Demographic Characteristic of respondents

Variables (n=251)	Mean (± SD)	Frequency (n)	Percentage (%)
Age			
≤ 22 years	21.73 (±1.34)	182	72.5
> 22 years		69	27.5
Gender			
Male		37	14.7
Female		214	85.3
Ethnicity			
Malay		206	82.1
Non-Malay		45	17.9
Marital status			
Single		251	100
Married		0	0
Year of study			
Year 1 & 2 (junior)		119	47.4
Year 3 & 4 (senior)		132	52.6
Programme			
Nursing		30	12.0
Biomedical		75	29.9
Dietetic		33	13.1
Environmental and Occupational Health		60	23.9
Nutrition and Community Health		53	21.1

Table 2: level of respondent's knowledge on HPV infection and vaccine

				Respondent
Variables (n=251)	**Median (IQR)**	**Max**	**Min**	**n (%)**
Level of knowledge	10 (5)	17	1	
Good knowledge (score ≥ 11)				107 (42.6)
Poor knowledge(score ≤ 10)				144 (57.4)

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Table 3: Distribution of respondent's knowledge towards HPV infection and vaccine (n=251)

Statements	Frequency, n (%)	
	Correct answer	Wrong answer
1. HPV infection is common. (T)	133 (53.0)	118 (47.0)
2. HPV is transmitted through sexual contact. (T)	173 (68.9)	78 (31.1)
3. People can transmit HPV to their partner even if they do not have symptoms of HPV infection. (T)	101 (40.2)	150 (59.8)
4. Most people with genital HPV infection have no visible signs and symptoms. (T)	99 (39.4)	152 (60.6)
5. Having multiple sexual partners' increases the risk of HPV infection. (T)	180 (71.7)	71 (28.3)
6. HPV can infect both men and women. (T)	85 (33.9)	166 (66.1)
7. Genital warts are caused by HPV. (T)	113 (45.0)	138 (55.0)
8. Persistent HPV infection can cause cervical cancer. (T)	186 (74.1)	65 (25.9)
9. Using condom can give total protection against HPV. (F)	83 (33.1)	168 (66.9)
10. HPV can be cured by taking antibiotic. (F)	108 (43.0)	143 (57.0)
11. HPV vaccine protects against cervical cancer. (T)	194 (77.3)	57 (22.7)
12. HPV vaccine protects against all types of the virus that cause cervical cancer. (F)	75 (29.9)	176 (70.1)
13. HPV vaccine is effective in protection against genital warts. (T)	133 (53.0)	118 (47.0)
14. HPV vaccine can protect against other sexually transmitted infections like HIV. (F)	98 (39.0)	153 (61.0)
15. HPV vaccination requires three doses of injection. (T)	198 (78.9)	53 (21.1)
16. HPV vaccine is effective if given to people who have never had sex. (T)	112 (44.6)	139 (55.4)
17. Women who received of HPV vaccine still need to get routine Pap smear. (T)	128 (51.0)	123 (49.0)
18. Free HPV vaccination is available in Malaysia for females aged 13 years old. (T)	175 (69.7)	76 (30.3)

T = true statement, F = false statement

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LIST OF FIGURE

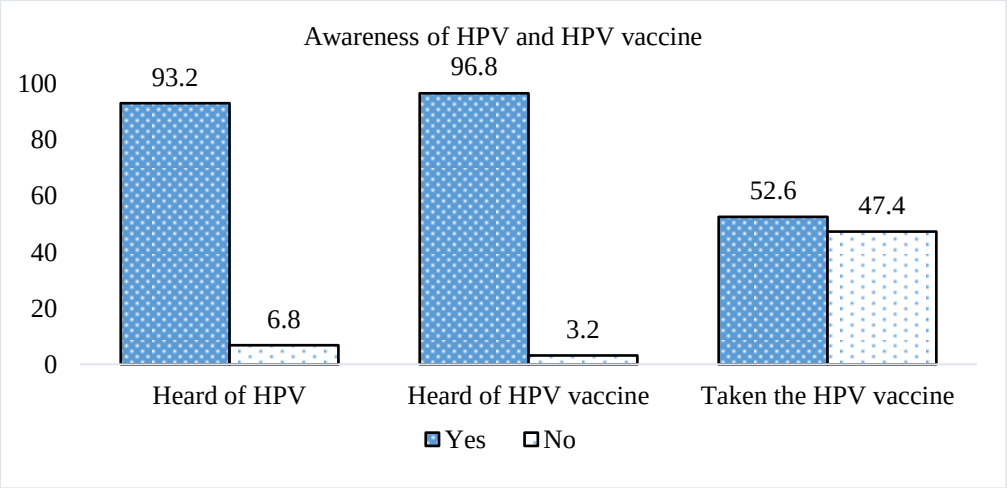

Figure 1: Awareness of HPV and HPV vaccine (n=251)

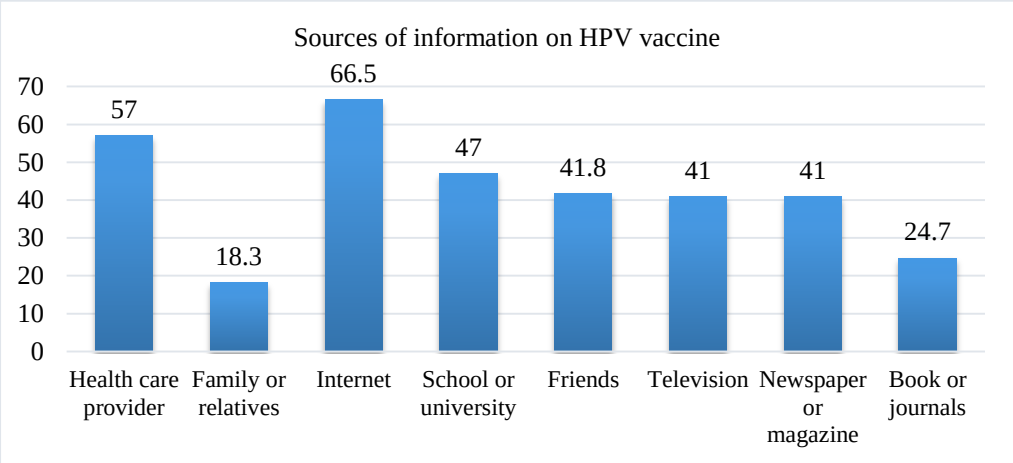

Figure 2: Sources of information on HPV vaccine (n=251)