



International Journal of Medical and Exercise Science

(Multidisciplinary, Peer Reviewed and Indexed Journal)

ORIGINAL ARTICLE

KNOWLEDGE AND AWARENESS ON HUMAN PAPILOMAVIRUS VACCINATION AMONG FINAL YEAR NURSING AND MEDICAL STUDENTS IN UNIVERSITI KEBANGSAAN MALAYSIA MEDICAL CENTRE

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Rohani Mamat¹, Fatimah Ahmedy², Roziah Arabi³, Noratika Jais⁴, NurulSyakila Ismail⁵, Mazlinda Musa⁶, Hamidah Hassan⁷, Siti Fatimah Saat⁸

Authors

^{1,7,8} Department of Nursing, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Malaysia.

² Department of Medical Education, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Malaysia

³ School of Nursing, KPJ Healthcare University College, Malaysia.

^{4,5} Hospital Gleneagles, Kuala Lumpur, Malaysia

Corresponding Author

⁶ Department of Medical Education, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Malaysia, Mail id: mazlinda@ums.edu.my

ABSTRACT

Background: In Malaysia, the incidence of about 2145 new cervical cancer cases are diagnosed annually in 2012 with about 621 deaths (ICO, 2016). The aim of this study is to identify level of knowledge and awareness on HPV vaccination among final year nursing and medical students in Universiti Kebangsaan Malaysia Medical Centre (UKMMC). **Methodology:** A cross sectional design study was carried out to identify the level of knowledge, level of awareness on HPV vaccination and the relationship between socio-demographic variables with level of knowledge and level of awareness on HPV vaccination among final year nursing and medical students in UKMMC. **Result:** Total 234 nursing and medical students were recruited in the present study. The results showed that most of student had high level of knowledge and awareness on HPV vaccination (85.9% and 100% respectively). For the association between socio-demographic data, findings showed that there was significant relationship between knowledge and race ($p=0.006$) and marital status ($p=0.006$) correspondingly. While, there were significant relationship between awareness and gender ($p=0.001$) and family history of cervical cancer ($p=0.014$) but had no relationship in race, economic status and marital status ($p>0.05$). While, there were significant relationship between the level of awareness and gender ($p=0.001$) and family history of cervical cancer ($p=0.014$). **Conclusion:** In conclusion, nursing and medical students had high knowledge and awareness. Race and marital status affected the knowledge while gender and family history of cervical cancer affected the awareness.

Keywords: HPV vaccines, Students, Knowledge, Awareness, cervical cancer

Received on 8th November 2020, Revised on 22th November 2020, Accepted on 28th November 2020
DOI:10.36678/IJMAES.2020.V06I04.007

INTRODUCTION

In worldwide, cervical cancer is the second most common cancer in women with incidence is approximately 445 000 new cases in 2012 with approximately 270 000 deaths (World Health Organization, 2014). In Malaysia, the incidence is about 2145 new cervical cancer cases are diagnosed annually in 2012 with about 621 deaths (ICO, 2016). Since cervical screening only detects neoplastic changes, HPV vaccination (HPVV) is the primary form of cervical cancer prevention (Armstrong, 2010). In 2010, Malaysia government announced an HPV vaccination programs for all 13-year-old girls at all school Malaysia (ICO, 2016)⁵. Healthcare professionals play an important role in providing information about HPV vaccination to society⁸. Knowledge and awareness of the vaccination are essential for the healthcare professional to the successfulness of their role in providing such information.

However, previous studies have shown that healthcare professionals did not know or were not aware of the HPV vaccination. Nevertheless, previous studies only focused on knowledge and attitude on HPV vaccination only but there is no study on awareness variable on HPV vaccination. Little is known about the knowledge and awareness level among final year students in the medical fields. This study will provide adequate input regarding the knowledge, awareness and factor that affect the acceptance of HPV vaccination, which can help final year students be fully prepared to address these issues when they enter the real world situation in their work field. It is also help the final year students to implement awareness programmes for HPV vaccination at various levels. Therefore, the main objectives of this study are to examine the knowledge and awareness on human

papilloma virus vaccination (HPPV) among final year nursing and medical students, and to determine factors associated with high level of knowledge and awareness^{7,10}.

METHODOLOGY

It is a cross sectional study conducted from October 2016 until July 2017 at Universiti Kebangsaan Malaysia Medical Centre (UKMMC). Among the 4th year nursing students and 5th year medical students. All students were recruited for the study accepts those who were on medical leave or refused to participate. Basic demographic data gathered include gender, ethnicity, financial status, marital status and present of cervical cancer in the family. Ethnicity is defined as into two categories which are native (Malay or Sabahan/Sarawakian) and non-native (Chinese or Indian). Financial status is divided into high and low based on a threshold household income of RM 3500 monthly. On the other hand, marital status is categorised as either single or married/living with a partner.

The main outcome variables are level of knowledge and level of awareness on HPV vaccination. A self-assessed questionnaire was constructed consist of two main domains; level of knowledge and level of awareness with 16 and 15 items respectively. The domain of level of knowledge composed of 16 items with the scaling 'Yes' and 'No'. The scoring is based on the number of "Yes" responses with a maximum attainable score of 16. A total score of less than 6 is considered as low level, a score of 6 to 11 as moderate level and a score of 12 or more as high level of knowledge.

The domain of level of awareness composed of 15 items rated using 5-point Likert's Scale. The scale range from 1 to 5 (1- Strongly disagree, 2-

Disagree, 3-Neutral, 4-Agree and 5- Strongly agree). The level of awareness is reflected by the total sum of the points with a minimum score of 15 up to a maximum score of 75. A total score of less than 38 implies low level of awareness while a score of 38 or more is considered as high level of awareness.

Data was analysed using Statistical Package for Social Sciences (SPSS) version 23. Descriptive analysis included frequencies and percentages of the demographic data and the scores of levels of knowledge and level of awareness. Independent T-test was used to determine association between the demographic variables and the scores. A p-value of less than 0.05 is considered statistically significant.

RESULTS

Demographic data

A total of 234 respondents among the final year nursing and medical students were received that corresponded with a response rate of 86% of the whole eligible respondents. (Out of 310 students). The majority of the respondents were Malay ethnic (72.6%) and two-thirds were female. More than half came from family with family income less than RM3500 per month. Most respondents were single with absent history of cervical cancer in the family. Details of the demographic data are shown in Table 1.

Demographic data		Frequency	Percentage
Gender			
Male		74	31.6%
Female		160	68.4%
Ethnicity			
Native	Malay - 170 (72.6%)	176	75.2%
	Others - 6 (2.6%)		
Non-native	Chinese - 40 (17.1%)	58	24.8%
	Indian - 18 (7.7%)		
Economic status (family income per month)			
< RM 3500		124	53.0%
>RM3500 and above		110	47.0%
Marital status			
Married/ living with partner		8	3.4%
Unmarried		226	96.6%
Family history of cervical cancer			
Yes		6	2.6%
No		228	97.4%

P value < 0.05

Table 1. Socio-Demographic Data

Level of Knowledge and Awareness on HPV vaccination.

The mean score of level of knowledge for all respondents was 13.2 ± 1.77 SD. Based on Table 2, most of the respondents demonstrated a

high level of knowledge on HPV vaccination (85.9%) with a mean score of. None of the respondents showed a low level of knowledge. Meanwhile all respondents had high awareness on HPV vaccination with the mean score of 54.7 ± 5.02

Level Of Knowledge	No. of Respondents, n (%)	Mean Score of Level of Knowledge \pm SD
Low knowledge	0(0.0%)	13.18
Moderate knowledge	33(14.1%)	
High knowledge	201(85.9%)	

Table 2. Level of Knowledge on HPV Vaccination among Respondents

The Association between socio-demographic and level of knowledge on HPV Vaccination

Statistical analysis has shown a significant association between the level of knowledge (based on the mean score) with ethnicity ($p=0.006$) and marital status ($p=0.006$) variables (Table 3). Non-Native and married

status demonstrated a higher mean score of the level of knowledge however for ethnicity the mean scores for both native and non-native were categorised as high level of level based on the scoring threshold with a mean difference of 0.64. On the other hand, the mean score of the single status is within the moderate level of knowledge category.

Variables	Mean \pm SD	p-value
Gender		0.230
Male	13.36 \pm 1.36	
Female	13.09 \pm 1.90	
Ethnicity		0.006
Native	13.02 \pm 1.87	
Non-Native	13.66 \pm 1.35	
Financial Status		0.542
< RM 3500	13.11 \pm 1.80	
RM3500 and above	13.25 \pm 1.74	
Marital status		0.006
Married/life with partner	13.24 \pm 1.74	
Single	11.50 \pm 1.93	
Family History of Cervical Cancer		0.496
Yes	13.67 \pm 1.03	
No	13.17 \pm 1.79	

Table 3. Level of Association between Socio-demographic data with Level of Knowledge on HPV Vaccination among Respondents

The Association between socio-demographic and level of Awareness on HPV Vaccination

There were significant differences between the mean score of the level of awareness with gender and present of history of cervical cancer ($p=0.001$ and 0.014 respectively).

Male gender and the absent of the family history yielded lower mean score of level of awareness. Despite these significant differences, the means score for all variables were categorised as high level of awareness.

Variables	Mean±SD	p-value
Gender		0.001
Male	52.93±4.86	
Female	55.42±4.89	
Ethnicity		0.142
Native	54.98±5.00	
Non-Native	53.86±5.01	
Financial Status		0.874
< RM 3500	54.75±5.14	
RM3500 and above	54.65±4.89	
Marital status		0.538
Married/living with partner	53.63±2.97	
Single	64.74±5.07	
Family History of Cervical Cancer		0.014
Yes	59.67±4.80	
No	54.57±4.96	

Table 4. Level of Association between Socio-demographic data with Level of Awareness on HPV Vaccination among Respondents

DISCUSSION

This study revealed two major findings: presence of high level of knowledge and awareness among the final year of medical and

nursing students, and these level have demonstrated significant association with certain variables, namely ethnicity and marital

status for level of knowledge, and gender and present of history of cervical cancer for level of awareness.

Majority of respondents had a high level of knowledge. It was found in the studies by Al-Naggar et al., (2010); Pandey et al., (2012); Rashwan and Saat., (2012) that stated that medical student had advanced knowledge about HPV vaccination than others students due to the fact that their education syllabus included more information regarding the disease, its treatment and prevention^{2,13,14}. Further supported by Al-darwish et al., (2014), medical students are the future health professionals and it is important to evaluate their knowledge in order to develop education and awareness policy should there is the need increase their knowledge which can then be disseminated into the society to reduce the morbidity and mortality due to cervical cancer¹.

In contrast, another study showed that the level of knowledge on HPV vaccination was inadequate¹⁰. This may be explained due to respondents involved in this study are first year medical students who are seemed to have little effect on knowledge of HPV vaccination over time. It is imperative that nursing and medical students have adequate knowledge about cervical cancer and HPV vaccination because most of them fall within the age group reported to have high rates of HPV infection and also because as they will be a healthcare provider in future, their counsel and recommendation would facilitate primary and secondary prevention of cervical cancer.

Chinese and Indian respondents have high level of knowledge on HPV vaccination as compared to Malay native. This finding is same with a study done in United States stated that ethnicity influence the level of knowledge¹⁵. It

reflects to the number of incidences of cervical cancer that had been diagnosed among Indian and Chinese are higher compared to Malay¹². With that, they might be susceptible to seek for extra knowledge on HPV vaccination for prevention in future. Yet, it is understandable that the lifestyle among the ethnicity is different and it will affect individual knowledge⁴.

Marital status of respondents also shows significant relationship with level of knowledge on HPV vaccination. It was means that respondents who are married and living with partner will seek extra knowledge because they realized that they are more prone to get HPV infection since they had been exposed to sexual intercourse. Male and female of nursing and medical students in the present study had no difference in knowledge due to having a same educational level. Healthcare provider is the one that should influence community to have HPV vaccination. In order to complete the task, they must have a good knowledge either they are male or female.

In the present study, even the respondents had different family background who had differ in socioeconomic status, but still their knowledge on HPV vaccination are not too much different because they were studied in same institution and received same education syllabus during their studies. History of family in cervical cancer also shows no significant relationship with level of knowledge on HPV vaccination. It is rarely tested by others studies. However, it is considered as importance to identify how that family background can affect family members' knowledge itself. Besides, for those who had experience in taking care of family members diagnosed with cervical cancer might trigger themselves to seek extra knowledge as they probably faced the same problem in future.

Yet, this reason can't be proven as further study is needed.

Both nursing and medical students were very aware the important of HPV vaccination. Similar to studies have revealed an outcome that most of medical students in premier medical school in India had high level of awareness¹³. This shows that nursing and medical students had a high awareness on HPV vaccination because definitely they have impact on the understanding of this important public health issue, with regard to etiology of cervical cancer, availability of the HPV vaccine and its protective efficacy in their curriculum syllabus and clinical posting. Johnson et al., (2014) also found similar level of awareness in Nepali population.

The present findings were differing from a study found that medical students had low awareness on HPV vaccination proved by only a small amount of respondents had been vaccinated with HPV vaccine^{6,7}. This could be explained by respondents of this study have reluctant attitude before onset of this study for the important topic and they rarely to practice it. The meaning of awareness on HPV vaccination is too broad to describe. Instead of that, awareness has a lot of interpretation in studies such as awareness regarding the availability of HPV vaccination, overall acceptance of HPV vaccine among the population and awareness of practice on HPV vaccination^{13,7}.

In the present study awareness was referred as awareness of HPV vaccination in the aspect of taking and promoting the HPV vaccine. Regardless of interpretation meaning awareness, a future healthcare provider must have a high awareness on HPV vaccination to widespread acceptance of HPV vaccines and to

lend enormous health benefits by decreasing morbidity and mortality associated with cervical cancer. Moreover, in the present study, the respondents were final year nursing and medical students who already had more clinical experience during their posting and they should have prepared themselves to face any concerns on HPV vaccination from community.

In the present study showed that there was a significant relationship in gender and level of awareness on HPV vaccination. Male students were likely to have less awareness of HPV vaccination compared to female. This finding is similar by a study done by Reimer et al., (2014), where the results indicated that female have high awareness compared to male¹⁵.

The result of the present study, HPV vaccination is most related with the participation of female in order to prevent cervical cancer. So, it is reasonable for female to have better awareness on HPV vaccination. Respondents who had family history of cervical cancer will have more concern of awareness on HPV vaccination because they had experienced by themselves to see the poor prognosis of family member who had been diagnosed with cervical cancer. By having high awareness, at least they were able to get vaccination for the prevention of HPV infection.

Through this study, there was no significant relationship between race and level of awareness on HPV vaccination. However, a study done in California showed a contrast result, where ethnicity contribute on level of awareness on HPV vaccination. These results were differing from the result of present study because it is understandable that there are no known any issues of racism occur in Malaysia, unlike in other countries, racism has been lighted as the reason why ethnicity bring a

huge effect on level of awareness on HPV vaccination.

Sometimes in certain country, minor ethnicity had been neglect by community in order to get vaccination. For example, in Malaysia, the immunisation-based programmes were opened to all citizens regardless of race. So, either the respondents were from minor ethnicity or major ethnicity, it will not affect the level of awareness due to harmony of ethnicity in Malaysia. The result of no significant relationship between race and awareness also might be due to Malay respondents was the majority races who participated in the present study¹¹.

It is not a factor that the respondents who had different family background with differ in socioeconomic status can affect the awareness on HPV vaccination among themselves. This may be due to precious knowledge that already exists in themselves as a nursing and medical student which go beyond limits in all over situation. It similar to a study done in Australia stated that socioeconomic status and living in remote area during childhood and parental religion were not suggestively associated with being vaccinated (Tung et al., 2016)¹⁶.

Marital status is not a deal for individual for having high or low awareness on HPV vaccination. It was means that whether the respondents were married or non-married, it will not be a factor contribute to awareness on HPV vaccination due to awareness that present in themselves as they had same exposure on how important of HPV vaccination and the impact of neglect the vaccination. Similarly, a study by Marlow et al., (2009) found that whether married or unmarried women had no different in vaccinating HPV vaccine⁹.

Ethical clearance: Ethical clearance was obtained from Malaysia National University for project code: ff-2017_106 with Ethic committee ref no: UKM PPU111/&/JEP-2017-150

Conflicts of Interest: The author declares that there is no competing interest in publishing this article.

Fund for the study: This is self-funded study.

CONCLUSION

This study has shown that the level of knowledge and awareness on HPV vaccination are high among the final year of medical and nursing students. Although several factors are shown to associated with the level of knowledge and awareness, the mean score for majority of the variables are within high level. Further evaluations including a more scrutinised statistical analysis on the practice of implementing HPV vaccination education by this future healthcare professional would provide a better picture on translating the knowledge into practices. However, the limitation of the study was these findings are not representing knowledge and awareness of whole number for nursing and medical students in Malaysia.

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Citation:

Rohani Mamat, Fatimah Ahmedy, Roziah Arabi, et al.(2020). Knowledge and Awareness on Human Papillomavirus Vaccination Among Final Year Nursing and Medical Students in Universiti Kebangsaan Malaysia Medical Centre, *ijmaes*; 6 (4); 899-908.