

Sociodemographic Determinants of Knowledge on HPV Vaccination among Iranian Women Living in Malaysia

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Abstract: Cervical cancer is one of the commonest cancers among women worldwide. This study aims to determine the level of knowledge related to Human Papilloma Virus vaccination (HPV) as a screening tool for cervical cancer and its sociodemographic determinants among Iranian women who are living in Malaysia. A cross-sectional study, using a convenience sampling method was conducted among 271 Iranian women aged 18 to 60 year olds who were living in Malaysia. Data collection was conducted using a self-administered questionnaire. A total of 271 Iranian women had participated in this study, with the mean age of 35.2 years. Majority of the respondents involved were 30 years of age and above (57.9%), single (51.7%), received tertiary education level (82.7%), unemployed (68.6%) and had no income (68.3%), did not have any children (57.9%) and also had poor knowledge on HPV vaccination (84.5%). The mean score for knowledge among the respondents was 2.258. Although all the sociodemographic factors studied had significant association with the level of knowledge on HPV vaccination ($p < 0.05$), but only marital status was found to be the only significant predicting factor for knowledge on HPV vaccination in the final predictive model obtained. Overall, the Iranian women who participated in this study had poor knowledge regarding HPV vaccination reflecting the needs for targeting the foreign residents living in Malaysia in any health promotion and education programme. This includes the use of a more understandable way of delivering the message such as the use of English language in the posters and mass media instead of only local language. The results are helpful in benchmarking the HPV-related knowledge among the Iranian Immigrants and could be used in the development of appropriate educational messages for the future cohort.

Key words: Knowledge • Iranian Women • HPV Vaccination

INTRODUCTION

Cervical cancer is the second most common cancer after breast cancer among women in the world. Since the 1970's, infection with Human Papilloma Virus (HPV) has been known to be the most important cause of cervical cancer [1] and it is the most prevalent sexually transmitted infection (STI) worldwide [2]. Incidence rates of HPV among women and men in the US are approximately 5.5 million per year and prevalence rates of HPV infection approach to 20 million [3].

There are almost one hundred different genotypes of HPV. Forty of these types infect the genitalia (genital warts) and fifteen put women at a high risk of

cervical cancer [4]. The HPV-16 and 18 are the most common subtypes which are associated with cervical cancer and HPV-6 and 11 are related subtypes with the genital warts [4]. Genital warts and cervical cancer can be prevented by HPV immunization. The HPV vaccine has the shown to potentially reduce the mortality and morbidity associated with cervical cancer [5]. It could also potentially reduce the incidence of cervical cancer by about 59% [6]. HPV vaccination may prevent condylomata, HPV acquisition, high-grade squamous intraepithelial lesions and carcinoma-in-situ, regression of cervical dysplasia or warts and elimination of residual cervical cancer after treatment [3].

In a study conducted by Khorasanizadeh *et al.* [7] on epidemiology of cervical cancer and HPV infection among Iranian women found that, the mean cervical cancer ASMR for Iran was 1.04 per 100,000 with the mortality to incidence ratio was 42%. They also reported that the cervical cancer incidence rate increased after age 30 and peaked between ages 55 and 65. The prevalence of HPV infection was 76% in cervical cancer patients and 7% among healthy Iranian women. Of the HPV types isolated, HPV 16 (54%), 18 (14%) and 31 (6%) were the most commonly detected in Iranian cervical cancer patients.

The acceptance of HPV vaccinations may be influenced by many factors ranging from insurance coverage, availability of vaccine, healthcare provider attitude, ability to navigate healthcare system and potentially to pay out of pocket [8]. There are three common barriers towards HPV vaccination reported, which include lack of knowledge about the vaccine or target disease, problems related to access to medical care and fears about vaccine safety [9]. Vaccine efficacy, cost and physician endorsement are important predictors of vaccine acceptability. Additionally, training and providing healthcare information regarding HPV vaccine is also necessary [9].

Many people do not have adequate knowledge on HPV vaccination and diseases that can be caused by Human papilloma Virus. A study conducted among 1348 young Italian women aged 14 to 24 year olds showed that only 23.3% of the participants knew that HPV is one of the most common viruses causing infections of the genital warts mucosa and also cervical cancer [10]. The same study also found that, less than half (42.1%) of the women involved in the study ever heard of HPV vaccine as a preventive measure for cervical cancer and only 15.3% of them knew that HPV vaccine is available in Italy.

Since vaccination against HPV became available, awareness of HPV has dramatically increased [11]. Little is known however, with regard to the level of knowledge among the immigrants population who may not familiar with the local language of certain countries which being used widely in most health promotion programmes and posters. The main purpose of this study was to determine the level of knowledge related to HPV vaccination and its sociodemographic determinants among the Iranian women who has been living in Malaysia.

Methodology: A cross-sectional study using convenience sampling method was conducted among Iranian women aged between 18 to 60 year olds who were living in

Cheras, Kuala Lumpur and Serdang, Selangor from early of April until the end of June 2010. A total of 271 women were recruited and eligible for the study. Data was collected using a self-administered questionnaire. There were 16 questions involved to measure the knowledge on HPV vaccination among respondents. Score of '1' will be given for any correct answer and '0' for any incorrect answer or those who answered 'do not know'. The mean score of 2.0 for knowledge was used as a cut-off point to categorize into good and poor level of knowledge. "Good knowledge" was referred to the scores more than mean and the scores equal or less than mean were referred to "poor knowledge" [12].

The questionnaire was pre-tested among 30 Iranian women who lived in Malaysia but from different location, followed by slight modifications of the questionnaire thereafter. The reliability test was also performed giving the Cronbach alpha value of 0.92. Data was later analyzed using the SPSS software version 17. Chi square test was used for bivariate analysis, whereas the multiple logistic regression was performed for the multivariate analysis.

RESULT

Sociodemographic Characteristic of the Respondents:

Total numbers of respondents involved in this study was 271 with respond rate of 100%. The sociodemographic characteristics of the respondents were shown in Table 1. Majority of them were aged 30 years and above, single (51.7%), received tertiary education level (82.7%), unemployed (68.6%) and had no income (68.3%), did not have any children (57.9%). Those who were categorized as single were also involved divorcee and widow.

Knowledge on HPV Vaccination: Majority of respondents (82.7%) did not have good knowledge regarding HPV vaccination. With regard to the source of information, 18.1% of them received the information from friends, their neighbours and their lecturers. Meanwhile, 10.0% received from gynaecologist and only 0.4% (1 respondent) received the information from a general medical doctor. None of them received the related information through television.

Association Between Knowledge and Sociodemographic

Factors: Table 4 shows that all the sociodemographic factors involved in this study have significant association with the level of knowledge on HPV vaccination ($p < 0.05$).

Table 1: Sociodemographic characteristics of the respondents (n=271)

Factor	f	%
Age		
< 30 year old	114	42.1
= 30 year old	157	57.9
Marital status		
Married	131	48.3
Single	140	51.7
Education level		
Secondary	47	17.3
Tertiary	224	82.7
Occupation		
Yes	85	31.4
No	186	68.6
Income		
Yes	86	31.7
No	185	68.3
No. of children		
Nil	157	57.9
≥ 1	114	42.1

Table 2: Knowledge on HPV vaccination among respondents (n=271)

Factor	f	%
Knowledge		
Good (> 2)	47	17.3
Poor (= 2)	224	82.7

Table 3: Sources of knowledge on HPV vaccination (n=271)

Sources of information	f	%
No source	193	71.2
General medical doctor	1	0.4
Television	0	0.0
Gynaecologist	27	10.0
Others	49	18.1

Table 4: Association between knowledge and sociodemographic factors (n=271)

Factor	Knowledge on HPV vaccination				χ^2	p
	Good		Poor			
	f	%	f	%		
Age						
< 30 year old	7	6.1	107	93.9	13.158	<0.001*
= 30 year old	35	22.3	122	77.7		
Marital status						
Married	35	26.7	96	73.3	24.373	<0.001*
single	7	5.0	133	95.0		
Education level						
Secondary	2	4.3	45	95.7	5.488	0.019*
Tertiary	40	17.9	184	82.1		
Occupation						
Yes	29	34.1	56	65.9	32.784	<0.001*
No	13	7.0	173	93.0		
Income						
Yes	30	34.9	56	65.1	36.150	<0.001*
No	12	6.5	173	93.5		
No. of children						
Nil	9	5.7	148	94.3	27.178	<0.001*
≥ 1	33	28.9	81	71.1		

*Significant at p<0.05

Table 5: Predictive model for knowledge on HPV vaccination (n=271)

Factor	B	Wald	p	Adj. OR	95% CI for OR
Age	0.916	3.694	0.055	2.500	0.982-6.366
Marital status	1.277	4.717	0.030*	3.585	1.133-11.346
Education level	1.012	1.588	0.208	2.750	0.570-13.265
Occupation	0.376	0.134	0.714	1.456	0.195-10.842
Income	1.218	1.412	0.235	3.380	0.454-25.183
No. of children	0.609	1.219	0.270	1.838	0.624-5.414
Constant	-4.992	31.578	<0.001*	0.007	

*Significant at p<0.05

Predicting Factor for Knowledge on HPV Vaccination:

The final predictive model obtained for this study showed that marital status (adjusted OR= 3.585, 95%CI: 1.133-11.346) was the only sociodemographic factor which is predicting the level of knowledge on HPV vaccination among the respondents (Table 5). Whereas, age was almost become a significant predicting factor in the model (p=0.055).

DISCUSSION

Knowledge on HPV Vaccination: Cancer became a big question for scientific community as no existing treatments could solve the problems related to this dreadful disease [13]. Vaccines have been used for many years as a way of preventing certain diseases including cancers such as cervical cancer. An adequate level of knowledge on HPV vaccination and the diseases caused by HPV plays an important role to develop a better understanding on the importance of the vaccine and the prevention of cervical cancer among women. According to Adekanle et al. [14], those with better knowledge of the disease had significant higher uptake of the screening compared with those with lower knowledge. This study demonstrates a poor knowledge on HPV vaccination among majority of the Iranian women who were living in Malaysia. Although television is a good source of disseminating health information, none of them reported received related information from television. This finding is contrary to a study involving Malaysians which was conducted by Tan [15], in which the main source of information for HPV vaccination was from media. This is probably contributed by the primary language used by the media which are Malay, English, mandarin and Tamil.

In a different study involving Malaysian women, a low level of knowledge on HPV infection and vaccine was also reported. The study which was conducted among 300 Malaysian women in the obstetrics and gynecology outpatient clinic in a selected hospital in Bangi, Selangor found that, seventy eight women (26%) had heard about the HPV virus and 65 about HPV vaccines (21.7%) [16].

A low level of knowledge on HPV infection, its relation to cervical cancer and prevention methods among Iranian women was also reported by Farzaneh *et al.* [17] who conducted a study among 500 Iranian women, aged between 20 and 50 presenting to local health centres in Tehran. However, they also found that although the knowledge is inadequate, their attitude towards education in this regards is extremely high.

The Association Between Sociodemographic Factors and Knowledge on HPV Vaccination: The findings of this study also found that there is a significant association between sociodemographic characteristics of a woman such as age, marital status, education level, occupation, income and number of children they have with their level of knowledge on HPV vaccination. A similar finding was also reported in a study conducted by Holcomb *et al.* [12] on knowledge and behaviour of adults related to human papillomavirus infection. They found a significant association between gender, marital status, age, years of education with knowledge about HPV infection. Younger adults were found to have better knowledge on HPV infection respectively compared to those who are older [12].

Meanwhile, in another study conducted among women in Belgium, Donders *et al.* [18] reported that women with lower education were more likely to know nothing about the cause of cervix cancer than women with higher education (54 versus 39%, $P = 0.016$). Compared to women above 40, young age (25 years or less) was a risk factor for poor knowledge of HPV ($P = 0.007$), cervix cancer ($P = 0.016$) and the HPV vaccine ($P = 0.07$), regardless of a higher degree of education (79% postgraduate degree versus 43.4% in the 40+-year-old women, $P = 0.006$) [18]. Women with a daughter (64.7%) or a son (69.2%) were more inclined to vaccinate their daughter than women without children (46.3%, $P < 0.0001$) [18]. In a different study Donders *et al.* [18] reported that, level of education and having daughters, sons or no children were no longer influenced the level of knowledge or willingness to accept the vaccine. Most parents favor the age group 12-16 years as an ideal time for vaccination [18].

A contrary finding was also reported by Tan [15]. According to Tan study, level of knowledge, income, having history of pap- smear test and occupation were not significant associated with knowledge level. In addition, there was significant association between marital status and knowledge of women on HPV vaccination. Women who were single had more knowledge on HPV vaccine.

The result of this study also indicates that marital status was the only sociodemographic factor significantly predicting the level of knowledge on HPV vaccination among Iranian women who are living in Malaysia. In a study done among Malaysian women by Al-Dubai *et al.* [16] on knowledge, attitudes and barriers for HPV vaccines, they reported that marital status was associated significantly with awareness of HPV and HPV vaccine ($p < 0.002$, $p < 0.002$; respectively), in addition to level of education ($p = 0.042$). In another study conducted among Malaysian women on the practice towards HPV vaccination, Al-Naggar and Bobryshev [19] reported that, age, marital status and family monthly income were significantly influence the practice of HPV vaccine.

CONCLUSION

This study showed that Iranian women who were living in Malaysia were having low knowledge on HPV vaccination. Marital status was found to be the only sociodemographic factor that significantly predicting the level of their knowledge on HPV vaccination. Although television is a good medium to disseminate health information, none of the respondents reported they received information related to HPV vaccination from television, which is likely related to language barrier. Since HPV vaccination programme is very important as a primary prevention from cervical cancer among women, promoting a good level of knowledge on related issue is necessary which include the provision of easily understandable posters, pamphlets and advertisement which not only can be understood by the local people but also the foreign residents.

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