

Research Article



A Pilot Survey of Awareness and Knowledge of Human Papillomavirus (HPV), Cervical Cancer and HPV Vaccine among Men and Women Attending for HPV Vaccination in Terengganu, Malaysia

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ABSTRACT

Cervical cancer is a major public health problem and it is the leading cause of cancer-related deaths in women as reported. The primary underlying cause of cervical cancer is human papilloma virus (HPV) which is the most common sexually transmitted infection. A little is known about the awareness and knowledge of HPV infection, cervical cancer and HPV vaccine in Malaysian women and men. Therefore, this survey is aimed to assess. A cross-sectional survey study was conducted at Universiti Sultan Zainal Abidin, Terengganu, Malaysia using a self-administered, anonymous questionnaire. A total of 112 women and men aged 15-45 years were included who came for HPV vaccination. Data were analysed with SPSS version 16.0 using standard descriptive statistic and P-values < 0.05 were considered significant. Mean age of respondents was 30 years. Overall, 99% of respondents knew that HPV vaccine protects them from cervical cancer, however, 68% were not aware of its effectiveness; 73% knew that HPV vaccine will not replace Pap smear screening; 94% correctly reported that HPV vaccine is also beneficial for males; 85% knew that HPV vaccine is not safe in pregnancy; Only 45% knew that HPV vaccine can be given during breast feeding; 77% respondents were motivated for vaccination through doctors; interestingly, 70% accepted that the cost of HPV vaccine is within acceptable price range. Study assessed knowledge about HPV infection and its vaccine. Results are encouraging. However, aggressive education is necessary to increase awareness and knowledge of HPV infection and its vaccine.

Keywords: Awareness, Knowledge, Human Papillomavirus, Cervical Cancer, HPV Vaccine, Malaysia

INTRODUCTION

Cervical cancer is one of the most common cancers in women worldwide and is the third most common cancer after breast and colorectal cancer in Malaysia.¹⁻² The primary underlying cause of cervical cancer is human papilloma virus (HPV) which is the most common sexually transmitted infection.

HPV infection is linked to 70% of all cervical cancers, 90% of genital warts, 40% of vulvar cancers, 70% of vaginal cancers, 40% of penile cancers and 85% of anal cancers.³⁻⁶ 'Around 291 million women worldwide are carriers of HPV DNA, of them 32% are infected with HPV16 or HPV18 or both',⁷ although there are reports of decreasing incidence of hospital admissions in some modern world with cervical cancer.³

Cervical cancer can be prevented by identifying pre-cancerous lesions using Pap smear screening and treating these lesions before they progress to cancer.⁸ HPV vaccines has high efficacy for prevention of HPV related diseases and cancers.⁹ In 2006, the Malaysian government provided regulatory approval of the HPV-vaccine and in 2009, The Food and Drug Administration (FDA), Centres for Disease Control (CDC) and Advisory Committee on Immunization Practices (ACIP) had recommended routine HPV vaccination of girls and boys aged between 9 to 26 years with the aim to deliver the vaccine prior to the onset of sexual activity.¹⁰ The CDC and FDA have determined that both quadrivalent

(Gardasil) and bivalent (Cervarix) vaccines are safe to use.¹¹ The HPV vaccines also demonstrated high efficacy, immunogenicity, and acceptable safety in women aged 24–45 years, regardless of previous exposure to HPV.¹² Reported barriers to HPV vaccination were 'high costs, limited availability, and lack of awareness'.¹³ Misconceptions and limited knowledge are major barriers for male patients. Therefore, level of acceptance would be high in males if they are encouraged by their parents, physicians or their partners.¹⁴⁻¹⁵ Little is known about the awareness of HPV infection and its vaccine in Malaysian women and men. A qualitative study in Malaysia reported that the majority of participants were not aware of HPV infection or HPV vaccine.¹⁶ Therefore this survey aimed to assess the level of awareness of HPV infection and its related diseases and knowledge towards HPV vaccination among women attending for HPV vaccination.

MATERIALS AND METHODS

Study Design

This cross-sectional survey was conducted among participants of HPV vaccination in the Universiti Sultan Zainal Abidin (UniSZA), Kampus Kota (City Campus), Kuala Terengganu, Terengganu, Malaysia, during the period from November 2013 until December 2013. Sample size was calculated using universal sampling technique based on previous reports and studies. Posters showing information regarding 'HPV vaccination campaign' was pasted all around the university campus and O&G



department of hospital. The initial sample size was determined to be 125 as they voluntarily registered for vaccination.

However, 13 respondents did not turn-up due to some unforeseen reasons. On the day of vaccination, written consent was obtained from the respondents and they were given written information about the conduct of the survey enclosed with the questionnaire form. Women aged more than 45 years and/or unable to communicate or who had already been vaccinated were excluded from this study.

Study Population

The target population included were UniSZA medical students, UniSZA staff, doctors and nurses from O&G department of Hospital Sultanah Nur Zahirah (HSNZ) and UniSZA.

Questionnaire and its Administration

A self-administered, anonymous questionnaire was developed after extensive literature review which was pretested and validated. Thus, questionnaire along with an information sheet was given to all respondents when arrived at the Pusat Kesihatan (Health Centre) UniSZA for first dose of HPV vaccination.

On average, each respondent took 5 to 10 minutes to complete the survey form. Content validity and reliability of questionnaire were verified by the UniSZA experts. The questionnaire contained 21 multiple-choice questions (with mostly « yes », « no », answers) concerning the basic socio-demographic characteristics (4 questions), knowledge regarding HPV, cervical cancer and HPV vaccine and the acceptability of HPV vaccine (15+2 questions). Fifteen questions were utilised to judge the knowledge level.

The questionnaire on knowledge was constructed using basic knowledge about HPV infection and its consequences. Knowledge of cervical cancer included cause, risk, and screening. Knowledge of HPV vaccine focused mainly on the efficacy and its benefit. Questions about acceptability were based on characteristics of the vaccine (e.g.; vaccination procedure, cost, benefit, and target group of vaccination). No financial or material incentives were provided for participation in this study.

Data Assessment and Statistical Analysis

The data collected were analysed using the statistical analysis program SPSS version 16.0. Descriptive statistics, including frequencies, percentages, 95% confidence intervals and design effects were used to describe the responses.

Because of the small sample size and because the design effects of this study were determined to be minimal, p-values of < 0.05 were used to indicate statistical significance.

RESULTS

Demographic Profile of Respondents

Among 112 participants, 9 were males and 103 were females. Age range of participants was 15-45 years with the mean age of 30 years and 64% of the study population (n=72) was between 15-25 years followed by 30% (n=33) of 25-35 years and 6% (n=7) of 35-45 years. Majority were Malays (99, 88%) and rest were Indians (7, 6%) Chinese (3, 3%) and others (3, 3%)[others were foreign staff of UniSZA and their spouse]. Ninety percent (n=101) of the participants were Muslims while Hindu were 5% (n=6), Christian 3% (n=3) and Buddha were 2% (n=2).

Table 1: HPV Scoring Based on Gender and Race (n=112)

Domains Knowledge of Human Papilloma Virus and Vaccine	Gender, Mean (SD)		95% CI	t-statistic (df)	p-value*	Race, Mean (SD)		95% CI	t-statistic (df)	p-value*
	Male (n = 9)	Female (n = 103)				Malay (n = 99)	Non-Malay (n = 13)			
Scoring HPV	9.44 (1.01)	10.57 (1.66)	-2.25, -0.01	-2.00 (110)	0.048	10.58 (1.59)	9.77 (1.92)	-0.15, 1.76	1.68 (110)	0.096

*Independent t-test.

Knowledge about HPV and HPV Vaccine

Almost all of our study respondents (111, 99%) knew that HPV is the cause of cervical cancer and HPV vaccine can protect them from this cancer. Moreover, they (103, 92%) were quite clear of the dose schedule. Interestingly, majority of our study respondents (82, 73%) were aware that HPV vaccination will not eliminate the need for continued cervical screening (Pap-smear). Approximately 80%-90% of all participants knew that HPV vaccine is safe, not recommended during pregnancy or anyone who planning to get pregnant and also beneficial for males protecting them from penile and anal cancers. Majority (79%) had the opinion that this vaccine is within

acceptable price range although 21% reported this vaccine as expensive.

In contrary, only 13% (n=15) knew the correct duration of this vaccine protection. In addition, 50%-60% can answer correctly that HPV vaccine can be given up to the age of 45 years, during breast feeding, even after previous history of HPV infection and there should be a gap of 6 months between the last dose of vaccination and pregnancy. 10-15% of respondents indicated that they have not received enough information.

Finally, our study population were mainly motivated for HPV vaccination by their doctors (86, 77%), followed by friends (16, 14%), internet (7, 6%), newspaper (2, 2%) and



television (1, 1%). Surprisingly, males [9.44 (1.01)] had significantly ($p=0.048$) lower knowledge about HPV and its vaccine as compared to females [10.57 (1.66)] but when compared between Malays [10.58 (1.59)] and non-Malays [9.77 (1.92)], there were no significant ($p=0.096$) difference observed (Table 1).

DISCUSSION

Globally cervical cancer is one of the major public health issue because of its high morbidity and mortality. HPV is identified as primary cause which is sexually transmitted infection.^{1,17} Sexual transmission of HPV is predominant public health problem. It is reported that 80% sexually active women by the age of 50 years are exposed to HPV.¹⁸ HPV infections have potential to affect equally to all socio-demographic groups. Although it is more prevalent in unmarried females with low education and financial status, there is also having report that HPV has special affinity for some indigenous clusters.¹⁹ There were reports of more than 500,000 new cases of carcinoma cervix and it is the most common cause of cancer related deaths with annual incidence of 275, 000 deaths per year.²⁰⁻²¹ Alarmingly the incidence of cancer cervix is progressively increasing and as high as 85% in developing and undeveloped counties.^{4,20,22} Ministry of Health has reported cervical carcinoma also a public problem in Malaysia.²³ National Cancer Registry in 2006, reported cervical cancer is the third cancer.²⁴ This knowledge enriches us about the understanding of influences human health and enables individuals and families to act upon their health problem.²⁵⁻²⁶ Similarly, for prevention of cervical carcinoma in Malaysia a group of scientist of University Malaya reported that 'health education, counselling, outreach programmes, and community-based interventions are needed'.^{8,27} Again 'immunization is a proven tool for controlling and eliminating the life-threatening infectious diseases' and WHO initiated global immunization programme has successfully eradicated and 'had greatly reduced the burden of several infectious disease'.²⁸⁻³¹ In recent times there has been histrionic development in understanding the pathology of HPV infection,³² cervical carcinoma and prophylactic use of HPV vaccine to prevent such ailment.³³ Thus vaccination programme has been introduced in many developed countries.³⁴

It is reported that in Sub-Saharan Africa the level of knowledge and awareness about cervical cancer, HPV infection and its vaccine is 'consistently' low.³¹ If we look at other side of earth at Central American country Honduras; mothers have quite clear idea of cervical cancer and it is preventable by screening. But little study population has knowledge about HPV and HPV vaccine. After necessary health education over 90% mothers of Honduras were convinced for vaccination of their daughters.²¹ In a black University (Agricultural and Mechanical) in Florida USA; most of the respondents were undergraduate female students who had a quite good knowledge about HPV infection which is linked with

cervical cancer. Although awareness is increasing but still lot of misconception exists thus health education campaign was suggested.³⁵ Another US study about HPV vaccine licensure in 'six dispersed geographical' areas among general public of African American, Caucasian and Hispanic origin found awareness and knowledge of HPV were low. Majority of the respondents do not aware about the link between HPV infection and cervical cancer. Thus it was difficult for researcher to continue discussion for prevention of HPV infection.³⁶ Awareness and knowledge of HPV were reported low in quite highly educated British community at Central London. Researchers suggested urgent need of public health education about HPV to develop carefulness about 'HPV transmission, cancer risk and protection'.³⁷ One more cross sectional study conducted in 2008 at Bangkok, Thailand among hospital Doctors and Nurses and found; knowledge and awareness 'regarding HPV infection, cervical cancer, and HPV vaccine'. Their attitudes regarding 'HPV infection, cervical cancer, and HPV vaccine' were considerably optimistic (Songthap).⁵ Similar 'encouraging' findings also reported from Christchurch, New Zealand that general practitioners (GP) and practice nurses (PN) knew HPV is the most common sexually transmitted infection and persistent HPV infection can cause cervical cancer.³ One such study conducted among the paediatric medical doctors in Turkey recently and majority were aware that HPV is one of top sexually transmitted infection; that can lead carcinoma cervix. But they were not aware that condom cannot protect against HPV infection.¹⁴ Researcher expected that these positive findings among paediatric doctors will promote Turkish National Immunization Programme. Health workers which include GP, paediatrician, gynaecologists and obstetricians, nurses, and midwives of Cameroon were well known about HPV infection and cervical cancer but they were not much clear about the relation of HIV infection and HPV infection and cervical carcinoma.¹⁰ Preventive Medicine reported 15 years back that among the Public University students of USA have very little knowledge and awareness about HPV infection and prevention.³⁸ Same journal Preventive Medicine after 10 years reported that 'awareness of HPV and HPV vaccine were high' in USA; although vaccine was not promoted much though consumer advertising but it was also observed that women of higher socioeconomic background have more vaccination.³⁹ This survey conducted soon after HPV vaccination was officially recommended. It is because low awareness of HPV and the risk factor for cervical carcinoma throughout the UK; researcher recommended 'urgent; need of health educational programme for prevention of HPV infection'.³⁴ Even very recently Malaysian secondary students also possess very little knowledge and awareness about cervical cancer and acceptance of HPV vaccination.²⁴

Present study was conducted among the clients receiving HPV vaccination in the Health Centre of FP. Very little propaganda was done. A few posters were fixed around



FP campus and HSNZ. A briefing lecture was conducted by principal investigator about importance of HPV vaccination. One hundred twenty five clients were initially registered but 13 of them were dropped due to some unanticipated reason. The study population mainly belongs FPSK and HSNZ thus they were quite cautious about their health. Obviously respondents belongs high socioeconomic and educational background. Thus their score was relatively high. On average score were 10+ in out 15 in answering about HPV infection and HPV vaccine. Thus our study population score above 67%. This score we can describe as above average. The present work thus corresponds with the work done at Thailand, Turkey, New Zealand and USA.^{3,5,38-39} Current research is contrary to one Malaysian study because our work has conducted mainly in Faculty of Medicine and Health Sciences.²⁴ All of the clients' for HPV vaccine were medical students, doctors, nurses, other health professionals, their spouses or close family relatives. Thus it is expected they are more cautious than general population.

CONCLUSION

Current study findings are quite inspiring but this is a cross sectional study with its own limitation. Further, well designed prospective study is suggested to explore HPV infection in Malaysian general population and risk of cervical cancer. Health educational programme must be initiated to increase the screening and acceptance of HPV vaccine.

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