ORIGINAL ARTICLE

Assessment of the knowledge, attitude and practices about Human Papilloma Virus vaccine among the nurses working in a tertiary hospital in China: A cross-sectional descriptive study

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Abstract

Objectives: To assess the knowledge about human papilloma virus infection and vaccine, to ascertain the attitude and practices about the vaccine, and to ascertain the determinants preventing people from getting themselves vaccinated.

Methods: The cross-sectional descriptive study was conducted from June to August 2015 in Henan Provincial People's Hospital, Henan, China, and comprised all the nursing staff including nursing students. A piloted semi-structured questionnaire was used for collecting data. Statistical analysis was done using SPSS 18.

Results: Of the 308 subjects, 190(61.6%) were professional nurses and 118(38.3%) were nursing students. The mean age of the nurses was 36.7±6.2 years and that of the students was 20.4±2.1 years. Overall, 254(82.5%) subjects were aware about the existence of human papilloma virus vaccine; 241(94.9%) thought that the vaccine could effectively prevent the development of cervical cancer; and 108(61.4%) were reluctant to get vaccinated because the vaccine was expensive.

Conclusion: There is a need to address the myths and misconceptions associated with vaccines in order to improve the acceptance of human papilloma virus vaccine among them.

Keywords: Cervical cancer, HPV vaccine, Nursing staff. (JPMA 67: 209; 2017)

Introduction

Globally, cervical cancer has been acknowledged as a major public health concern owing to its magnitude and wide distribution in low-resource settings.[1] It has been identified as the second most prevalent cancer in females residing in developing nations, with close to 0.45 million new cases and 0.23 million associated deaths (out of 0.27 million worldwide), being reported in low and middle income nations in 2012 alone.[1] Furthermore, the cervical cancer alone comprises 15% of all the cancers diagnosed among females from the developing nations with a lifetime risk of almost 3%.[2]

Among the multiple risk factors identified, human papilloma virus (HPV) infection remains the commonest cause, accounting for 99% of the cervical cancer cases.[1] HPV virus is sexually transmitted and can infect women from all age groups.[3] In fact, it has been reported that more than 50% of the sexually active females tend to get exposed to at least one HPV type (out of the 118 strains of HPV, of which 14 are carcinogenic — high-risk HPV).[1,4] The problem is further complicated as most of the HPV infections (70-90%) or pre-cancerous lesions regress on their own, while only 10% of the infected women develop malignancy after a latent period of 5-20 years depending on the immune status of the women.[1,5] Findings of a study done in China reiterated the role of poor socioeconomic status, multi-parity, early age at first delivery, poor genital hygiene, and co-infection with other sexually transmitted diseases.[6]

It is a proven fact that cervical cancer is totally preventable by virtue of periodic screening, treatment of pre-cancerous lesions, and administration of available HPV vaccine as evidenced in developed nations.[5,7] Two types of HPV vaccine — bivalent and quadrivalent — have been approved for administration to bring about a reduction in the incidence of cervical cancer.[1,7,8] However, it is really shocking and unacceptable that millions of women are still dying because of the malignancy despite the presence of an effective vaccine.[9,10] Further, it has been estimated that in the absence of active interventions, cervical cancer-associated mortality rates might increase by 25% in the coming decade.[9]

Moreover, the majority of these deaths can be prevented in developing nations, provided the health professionals are adequately and periodically sensitised about the HPV vaccine so that they can educate and improve the acceptance of HPV vaccine among the general

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population.[4,8,11] In fact, various studies have been conducted in heterogeneous settings to gain an insight regarding the knowledge about the HPV vaccine among health professionals.[4,12] Nevertheless, very few such studies have been conducted in the current settings. Thus, in order to enhance the uptake of HPV vaccine, it is crucial to assess the knowledge and perceptions of health professionals initially.

The present study was planned to assess the knowledge about HPV infection and vaccine, to ascertain the attitude and practices about HPV vaccine, and to ascertain the determinants preventing people from getting themselves vaccinated.

Subjects and Methods

The cross-sectional descriptive study was conducted from June to August 2015 in Henan Provincial People's Hospital, Henan, China, and comprised all the nursing staff and nursing students using universal sampling.

Those who were absent or unwilling to participate were excluded.

A piloted, semi-structured questionnaire was used for collecting data. The questionnaire was prepared by carefully assessing the published studies,[4,12,15] and was validated by piloting the questionnaire among the nursing staff. These staffs were excluded from further analysis. The questionnaire consisted of five major sections: socio-demographic details (age, gender, education, and marital status), knowledge about HPV infection (9 questions), knowledge about HPV vaccine (5 questions), attitude about HPV vaccine (6 questions), and practices pertaining to the HPV vaccine.

A comprehensive list consisting of all the names of nursing staffs was prepared before collecting the information. All the nursing staff, including nursing students, were interviewed using the self-administered semi-structured questionnaire. After getting approval from the institutional ethics review committee, the rationale of the study was explained to the subjects, and informed consent was obtained from all the participants who were assured about confidentiality of the data. Multiple visits were paid by the principal investigators to cover all members of the staff so that those working in the night shift could also be covered.

First and second section of the questionnaire was filled by all the respondents, while those subjects who were aware about HPV vaccine, only they were instructed to fill up sections three and four. The attitude of the study participants was assessed using three options for each of the questions — yes, no, and don't know.

Data entry was done in Microsoft Excel and analysis was done using SPSS 18. Frequencies and percentages were calculated for all variables. Chi-square test was used to study the association between the two groups (nursing students and working nurses) and their knowledge about HPV infection and vaccine.

Results

A total of 337 subjects were approached; 207(61.4%) staff and 130(38.5%) students. Of them, 23(6.8%) were on leave and 6(1.8%) refused to participate. The final sample stood at 308(91.3%), and of them 190(61.7%) were nursing staff and 118(38.3%) were nursing students.

The mean age of the nurses was 36.7±6.2 years and that of the students was 20.4±2.1 years. Besides, 267(86.7%) participants were female. The experience of the working nurses ranged from 4 to 17 years. Further, 170(55.2%) subjects were married, and 181(95.3%) of the working nurses had a professional degree from a recognised university.

As far as knowledge about HPV infection was concerned, its ability to infect both genders, tendency to infect a large proportion of women in their lifetime, spontaneous resolution, mode of transmission, and role of condom,

Table-1: Knowledge about human papilloma virus (HPV) infection among the nursing staffs.

Knowledge about HPV infection		Correct response by nursing student [n(%)] N=118	Correct response by working nurse [n(%)] N=190	p-value
Knowledge about HPV infection	Can infect both men and women	71(60.2%)	142(74.7%)	0.003
	These are often asymptomatic	63(53.4%)	113(59.5%)	0.14
	Most women will acquire the HPV infections within their life	55(46.6%)	129(67.9%)	0.001
	Most genital HPV infections can resolve spontaneously	74(62.7%)	149(78.4%)	0.001
	10% infections can be persistent	70(59.3%)	151(7.5%)	0.001
	They can lead to cervical cancer	116(98.3%)	182(95.8%)	0.1
	Transmitted only through sexual intercourse	68(57.6%)	133(70%)	0.01
	Risk is enhanced with increase in number of sexual partners	103(87.3%)	166(87.4%)	0.49
	Condom lowers the risk of genital infection	109(92.4%)	184(96.8%)	0.03

Table-2: Knowledge about human papilloma virus (HPV) vaccine among the nursing staffs.

Knowledge about HPV vaccine		Correct response by nursing student [n(%)] N=75	Correct response by working nurse [n(%)] N=179	p-value
Knowledge about HPV vaccine	Recommended only in developed nations	54(72%)	130(72.6%)	0.01
	Before its administration screening for HPV is mandatory	27(36%)	78(43.6%)	0.1
	Can be given only to females	51(68%)	141(78.8%)	0.03
	Is safe	35(46.7%)	144(80.4%)	0.001
	Protect only against cervical cancer	36(48%)	102(56.9%)	0.09

Table-3: Attitude of the nursing staff towards human papilloma virus (HPV) vaccine.

Attitude of nursing staff [N=254]	Yes [n(%)]	No / Don't know [n(%)]
Do you think HPV vaccine can promote sexual promiscuity?	178(70.1%)	76(29.9%)
Do you think HPV vaccine can encourage unsafe sex?	173(68.1%)	81(31.9%)
In your opinion, should males be vaccinated with HPV vaccine	210(82.7%)	44(17.3%)
Would you advocate HPV vaccine for adolescents?	164(64.6%)	90(35.4%)
Is HPV vaccine a safe and effective tool to prevent cancer cervix?	241(94.9%)	13(5.1%)
Should sex education be a part of HPV vaccination program?	233(91.7%)	21(8.3%)

Table-4: Factors restricting the acceptance of human papilloma virus (HPV) vaccine.

Identified barriers	Number (%)* [N=176]
Cost of the vaccine	108(61.4%)
Being not sexually active	41(23.3%)
Limited knowledge about HPV vaccine	94(53.4%)
Vaccine might enhance high risk sexual behaviour	93(52.8%)
Concerns about vaccine side effects	79(44.9%)
Poor efficacy of the vaccine	55(31.3%)

was significantly associated ($p<0.05$ each) with knowledge among the nursing staff (Table-1).

Out of the 308 subjects, only 254(82.5%) subjects had the knowledge that a vaccine was available which could prevent the development of cervical cancer. For all the variables assessed, the extent of correct knowledge was higher among working nurses (Table-2). In most of the instances, the source of information was the teaching curriculum for 149(58.6%) subjects, followed by teachers 140(55.4%), television 104(41%), and relatives 75(29.6%).

Of the 254 subjects who had HPV knowledge, 178(70%) were of the opinion that HPV vaccine could enhance high-risk sexual behaviour; 241(94.9%) thought that the vaccine could effectively halt the onset and progress of cervical cancer; and 233(92%) supported the idea of sex education for strengthening HPV vaccination initiative (Table-3).

As for the vaccination status, 78(30.7%) subjects had actually received immunisation with the HPV vaccine and the remaining 176(69.3%) were reluctant. This was mainly due to the expensive nature of the vaccine in 108(61.4%) cases, followed by limited knowledge about different aspects of vaccine 94(53.4%), and the fear that the vaccine might increase high-risk sexual behaviour as it will provide a sense of security 93(52.8%) (Table-4).

Discussion

The current study was targeted towards nursing staff as in most healthcare establishments, nurses have been acknowledged as the first contact with patients and their family members.[11,15] Thus, they can play a significant role in promoting the acceptability to the HPV vaccine among the general population which is either unaware or even reluctant to accept the same because of the various myths and misconceptions prevalent in society.[16,17] Further, as nursing staff is one of the key stakeholders in the care and management of patients, they are often trusted by the local population.[15,17] Nevertheless, in order to achieve this ultimate aim, it is very important to assess the knowledge, attitude and practices of the nurses themselves so that based on the results the identified gaps can be bridged.[18]

In our cross-sectional study, the mean age of the nursing staff was 29.8±7.1 years with 85% among them being female. Various other epidemiological studies have shown different age groups ranging from 18 years to 42 years, depending upon the targeted population — nursing student or working nurse, and the selected inclusion criteria like having a minimum experience of 10 years and

above.[4,5,7,11]

It was observed in our study that working nurses had a much better knowledge about different aspects of HPV infection, like its ability to infect both genders, tendency to infect a large proportion of women in their lifetime, spontaneous resolution of most of the infections despite taking no treatment, and modes of transmission. This could be because of their practical experience acquired over the years by interacting with doctors and other healthcare providers. As nursing students are often devoid of that, their extent of knowledge was comparatively less. A study conducted with similar objective in a tertiary hospital in Nigeria showed that almost 99.4% of the working nurses were aware about the human immunodeficiency virus (HIV) infection.[4]

Further, it was observed that out of the 308 subjects, only 254(82.5%) had the knowledge that a vaccine was available which could prevent the development of cervical cancer. However, the overall estimate could be misleading as the percentage alarmingly dropped down to 63.6% (75/118) among the nursing students. In contrast, another study which was performed among nursing students in Turkey, the awareness about HPV vaccine was almost 78%.[8] The probable reason for such disparity could be because of the large percentage of nursing students in our study being from the first year and thus had not been exposed to HPV infection or vaccine yet in their curriculum.

On inquiring about the source of their information, most of the study participants attributed that to their teaching curriculum (58.6%), followed by their teachers (55.4%). However, variable findings have been observed based upon the targeted population for the study, like medical representatives for physicians,[19] television or discussion with peers for adolescent girls,[20] and treating physician for adult women.[21]

In the present study, around 70% of the nursing staffs were of the opinion that HPV vaccine could enhance high-risk sexual behaviour. This is not a very uncommon finding, as after receiving the vaccine, people tend to have a false sense of security and thus indulge themselves in high-risk sexual behaviour.[22,23] Not only that, almost 95% of the subjects who knew about the existence of the vaccine, were sure that it could effectively prevent cervical malignancy. Similar findings have been observed in most of the other epidemiological studies performed across the world.[2,4,11,12,23] Furthermore, 92% of our participants advocated that sex education should be given due attention so that acceptance of HPV vaccine can be enhanced. In fact, this has been identified as one of the key challenges to ensure success of HPV vaccine in the South African region.[24]

However, one of the key areas in which health authorities should divert their attention is towards improving the acceptance of the HPV vaccine among the nursing staff. This is a major concern as although 254(82.5%) were aware about the existence of the vaccine, only 78(30.7%) had actually received HPV immunisation. This was a wide knowledge-practice gap in our study population. Multiple reasons like high cost of the vaccine (61.4%), limited knowledge about different aspects of the vaccine (53.4%), and the fear that the vaccine might increase high-risk sexual behaviour were the key determinants which negatively influenced the acceptance of the vaccine. Similar sorts of barriers have been identified in heterogeneous settings.[25-29] In other words, it reflects the inability of the programme managers to address the concerns of the local population. Hence, the policy-makers should work in coordination with other stakeholders to meet these concerns and thus improve the acceptance of HPV vaccine among nurses as well as the general population.

The strength of the present study is its holistic nature as an attempt was made to cover all the possible areas pertaining to the knowledge about HPV infection and vaccine, attitude and existing practices in the study population. Further, barriers have been identified which are preventing nurses from being vaccinated so that the stakeholders can take a note of that and hence improve the acceptance level among them.

However, the study had its limitations as it was conducted in a single hospital and thus the results cannot be generalised. Also, owing to the sample variation between the two groups was high, especially with regard to their experience and exposure to HPV vaccine, the presence of different confounding factors cannot be ruled out.

Conclusion

Nursing staff can play a key role in improving the acceptance level of HPV vaccine among the general population. It was observed that a major proportion of nurses were aware about HPV infection and the vaccine, but a very small percentage of them were actually immunised. There is a need to sensitise the nursing staff so that the myths and misconceptions associated with the vaccine could be addressed and eventually the acceptance among them and society could be improved.

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