

Awareness and Knowledge of Human Papillomavirus and its Vaccine Amongst Doctors of Tertiary Care Hospital

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Abstract

Objective: This study was carried out to determine the awareness and level of knowledge of Human Papillomavirus and its vaccine amongst doctors and their attitude towards vaccination.

Methodology: This cross sectional study was conducted at Wah Medical College & its affiliated teaching hospital Wah Cantt, Pakistan to recruit doctors only into the study. Amongst the targeted population of 205 subjects, an anonymous, self-administered survey was distributed. The survey was designed to have multiple-choice questions based on literature, assessing awareness and knowledge of Human Papillomavirus & its vaccine and their attitude towards vaccination. Data was analyzed using SPSS software (version 17.0) and chi-square test was used to test differences in awareness and knowledge.

Results: Out of a total of 205 doctors who were included in the study, 199 responded resulting in a response rate of 97%. However, 10 surveys were excluded from a study being incomplete or having invalid responses. Surveys from 189 participants were analyzed with a mean age of 31.8 ± 10.3 years and the majority were females (70.9%). Overall awareness of Human Papillomavirus was high amongst doctors (96.2%). 28.6% had never heard of HPV vaccine. Majority of the participants preferred only girls to receive this vaccination while 93.7% expressed their interest to have this vaccination.

Conclusion: Imparting knowledge regarding Human Papillomavirus vaccine amongst doctors is a necessary step towards implementing effective prevention programmes and to reduce the burden of cervical cancer in Pakistan.

Key words: Human Papillomavirus, vaccine, awareness, knowledge level, attitude.

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Introduction

Human Papillomavirus (HPV) causes various cancers in humans which includes oral, pharyngeal, genital and anal cancers.¹⁻⁴ The most common amongst these is cervical cancer and persistent infection with oncogenic HPV genotypes is responsible in almost all cases of cervical cancer.⁵ Cervical cancer is the third most common cancer in women worldwide and each year there are 265,000 deaths from cervical cancer globally, nearly 87% of these occurring in low-resource countries.⁶⁻⁷ The significant public health burden of HPV-related disease, sub-optimal screening strategies

as well as the difficulty in totally eliminating the risk of HPV transmission via the use of condoms has led to an interest in the development of vaccines which prevent against HPV infection.⁸⁻¹⁰

The US Food and Drug Administration approved the first HPV vaccine in 2006. There are currently three vaccines available against HPV infection: bivalent (Cervarix, GlaxoSmithKline), quadrivalent (Gardasil, Merck), and nonavalent (Gardasil, Merck), bivalent protects against HPV strains 16 and 18, quadrivalent against HPV 6, 11, 16, 18, and nonavalent against HPV

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6, 11, 16, 18, 31, 33, 45, 52 and 58 respectively.¹¹ Vaccination against these strains is crucial at a young age as the prevalence of HPV infection increases every year between 14 to 24 years of age.¹² During 2015, the Advisory Committee on Immunization Practices (ACIP) recommended routine HPV vaccination at the age of 11 or 12 years.¹³ ACIP also recommended vaccination for females aged 13 through 26 years and males aged 13 through 21 years who have not been vaccinated previously.¹³

Doctor's knowledge of HPV and its vaccine is an important predictor of intention to vaccinate patients and their recommendation is considered to be crucial for HPV vaccine acceptance in general population which will have an impact on widespread HPV vaccine implementation.^{14,15} So the success of immunization programs in the prevention of cervical cancer depends largely upon the doctor's knowledge of HPV infection and its vaccine and whether they believe and prescribe immunization against cervical cancer.¹⁵

Therefore, the present study was designed to evaluate awareness and knowledge of HPV infection and its vaccine amongst doctors of various specialties and their attitude towards vaccination.

Methodology

Amongst targeted population of 205 doctors of Wah Medical College & its affiliated teaching hospital Wah Cantt, the self-administered, anonymous, multiple-choice questionnaire surveys were distributed to doctors of different specialties in Oct-Nov, 2015. A total of 205 surveys were distributed. Amongst these, 6 doctors declined to participate and 199 filled the survey questionnaire. 10 surveys were excluded as being incomplete or having invalid responses. Thus, the final sample size was 189. The study was approved by the institutional ethics committee.

Each participant received a verbal explanation about the objectives of the study and verbal informed consent was obtained. Participants were recruited via direct contact by one of the study authors. The survey comprised of four sections to gather information regarding demographic characteristics of the participants, awareness, knowledge and attitude towards vaccination. The demographic characteristics included age, gender, qualification & designation. Awareness regarding HPV & its vaccine was considered favorable by the correct response to a question such as "HPV may cause - infertility/cervical cancer/endometriosis?" & "Have you ever heard about

HPV vaccine" & the response options were "yes" and "no". Knowledge level of HPV infection was assessed by asking two questions regarding its mode of transmission and its association with cancer of the genital tract. Each correct answer was scored as 1 and the knowledge level was classified to be good (2) or poor (1). Knowledge of HPV vaccine was assessed by asking 16 questions. Each correct response was scored as 1 & incorrect as 0. A total score of >14/16 was considered as good, 10-14/16 as average & <10 as poor. Two questions were used to examine the attitude towards vaccination & those were "whom would you prefer to receive HPV vaccination in your family", the response options were girls/boys/both and "Would you like your family & friends to have this vaccination? Yes/No"

For statistical analysis, SPSS statistics (version 17.0) was used. Variables were analyzed using frequencies, means, standard deviations and percentages. Chi-square (X^2) test was used to examine the differences in demographic variables between doctors with knowledge and awareness about HPV infection and its vaccine. P value of <0.05 was considered statistically significant.

Results

Out of a total of 205 doctors who were included in the study, 199 responded resulting in a response rate of 97%. However, 10 surveys were excluded from a study being incomplete or having invalid responses. The mean age of the respondents was 31.8±10.3 years. The majority of the respondents were females (70.9%). Other demographic characteristics of the respondents are tabulated in Table I.

The data presented in table II reveals that general awareness of HPV was high amongst all respondents.

Characteristics	Number (%)
Age (years) (mean±SD¹)	31.8±10.3
Gender	
Female	134 (70.9%)
Male	55 (29.1%)
Education	
MBBS	139 (73.5%)
FCPS	50 (26.5%)
Designation	
HO ² /MO ³ /PGT ⁴	138 (73%)
Senior Registrar/Astt. ⁵ Professor	33 (17.5%)
Associate/Professor	18 (9.5%)

Standard deviation¹, House officer², Medical officer³, Post Graduate Trainee⁴, Assistant⁵

The causative link between Human Papillomavirus (HPV) and cervical cancer was well identified by most respondents (96.2%). On the other hand, the awareness of HPV vaccine was low as 28.6% of respondents had never heard of HPV vaccine. There were no significant gender differences with respect to awareness of HPV & its vaccine amongst doctors ($p > 0.05$).

Most of the respondents agreed that HPV vaccine is used for prophylaxis of cervical cancer (82.5%) although few correctly identified that HPV vaccine protection lasts for life long (29.1%). More than half of our respondents didn't recognize the association of HPV with genital warts (75.1%). Only 11.1% believed that HPV vaccine is ineffective in sexually active people. 68.8% didn't know the age at which this vaccine should be administered while only 33.3% agreed that this vaccine doesn't require any booster dose. Almost half of our respondents believed that HPV vaccine should be given to women only (52.9%). The inconsistencies in the respondent's opinions on HPV vaccine highlighted great confusion surrounding its use and limitations.

Variables	Female (n)	Male (n)	Total (N) 189 (%)	P value
HPV may cause				
Cervical cancer (correct answer)	130	52	182 (96.2%)	0.426
Have you ever heard about HPV Vaccine?				
Yes	100	35	135 (71.4%)	0.129

Knowledge score on HPV vaccine was poor among 81.1% of the respondents. Only 18.9% of respondents achieved average score & not even a single respondent achieved a good score (Table III)

Knowledge score on HPV infection was favourable as 85.7% achieved good score & only 14.3% were in the category of poor knowledge score. There were no significant differences in knowledge score of HPV infection & its vaccine with respect to gender differences and qualification ($p > 0.05$) (Table III and figure. 1)

When inquired about any previous knowledge on HPV vaccine, only 47.6% of the participants had any knowledge. Amongst them, 38.6% mentioned that

medical education was their primary source of information about the vaccine, 3.7% had received information from their friends & 4.8% had some other source of information.

Table III: Adequacy of knowledge of HPV & its vaccine

Knowledge score	Females (N)	Males (N)	Total (%)	P value
HPV vaccine				
Good (>14)	0	0	0%	0.189
Average (10-14)	28	7	35(18.5%)	
Poor (<10)	106	48	154(81.4%)	
HPV Infection				
Good (2)	113	49	162 (85.7%)	0.282
Poor (1)	21	6	27(14.3%)	

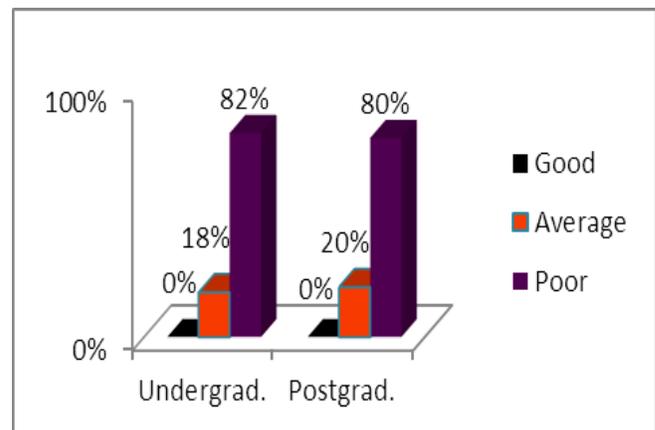


Figure 1. Comparison of undergraduate vs postgraduate doctors to assess knowledge score of HPV Vaccine

When asked about HPV antibody testing in their family, nearly all responded that no female had ever been tested for HPV antibodies (91.4%). Despite poor knowledge, the majority of the participants expressed a positive attitude towards HPV vaccination. When inquired whether they would have their family & friends receive this HPV vaccination, nearly all respondents answered favorably (93.7%); and this rate was 52.9% for the girls. One participant mentioned that he would recommend this vaccine only after getting knowledge and only one participant said that she is an anti-vaccine person and according to her opinion no child should get vaccinated for anything because having healthy habits is better than putting un-necessary chemicals in the body. (figure 2)

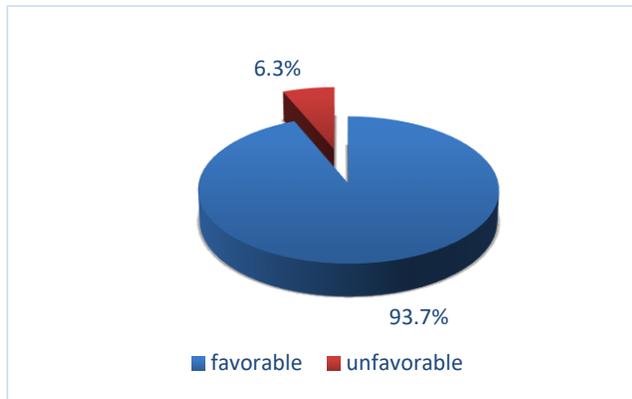


Figure 2. Attitude towards vaccine acceptability

Discussion

To our knowledge, this is the first study performed in Pakistan to assess awareness and knowledge of HPV & its vaccine amongst doctors and their attitude towards vaccination because this is important in targeted information campaigns. Our survey found significant deficits in the knowledge of HPV vaccine amongst doctors which could have implications for future screening programs as they are known to play a significant role in the education of patients and implementation of effective prevention programs in Pakistan.

We found in our study that awareness and knowledge of HPV infection was high amongst doctors and these results were comparable to the results of international studies by Asiedu GB¹⁴, Naki MM¹⁵, Berraho M¹⁶, Remes P¹⁷, Tolunay OI¹⁸ and Kress CM¹⁹ which highlighted that awareness and knowledge of HPV infection was significantly high in the physician group.

Almost one third of the doctors in our study were unaware of HPV vaccine. These results were in contrast to a survey held in Vietnam¹⁴, Fez¹⁶ and Turkey¹⁸ where awareness of HPV vaccine was found to be high amongst health care providers. Surprisingly more than three fourth of the doctors in our study had poor knowledge of HPV vaccine (81.4%). There is no previous local data available on awareness and knowledge of HPV vaccine among health care providers while in Kenya even primary school teachers had a moderate level of knowledge on HPV vaccine²⁰. Other international studies have shown that Physicians had a higher level of knowledge when assessed for HPV vaccine.^{14,15} Our results are a cause for concern since studies have highlighted that the strongest predictor of HPV vaccination is awareness, knowledge and recommendation of health care providers.

Acceptability of vaccine was high in our study (93.7%). These results are similar to recent studies on vaccine acceptability in Vietnam, Tanzania, Turkey, Botswana, Kenya, Ghana and South Africa.^{14,15,17,18,21-24}

Our data suggest that a doctor's level of knowledge and understanding of HPV vaccine should be improved.

Conclusion

Lack of the related knowledge about HPV vaccine may be one of the important factors for high incidence rate of cervical cancer in Pakistan. Imparting knowledge regarding HPV vaccine amongst doctors is a necessary step towards implementing effective prevention programs and to reduce the burden of cervical cancer in our country. The undergraduate and postgraduate curriculum should be raised keeping in view of the latest medical updates

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