

## “STUDY OF AWARENESS OF HUMAN PAPILOMA VIRUS AND HPV VACCINE AMONG MEDICAL STUDENTS”

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### ABSTRACT

*Cervical cancer is the second most common cancer among women worldwide. Cancer cervix is caused by Human papilloma virus. Despite high prevalence, awareness of HPV is generally poor in most of the countries. This study was to assess HPV and HPV vaccine awareness, HPV-related knowledge, and attitudes towards HPV vaccination among medical students. A cross-sectional study was conducted from August to November 2013 to assess the level of awareness about various aspects of HPV infection and vaccine among medical students. According to 109 (69.4%) students carcinoma cervix was the most common cancer in women in India. Almost 137(87.3%) of the students knew HPV was the causative agent for ca cervix but only 115 (73.2%) answered common strains of HPV in causation of ca cervix. Almost 97(61.8%) students knew that HPV vaccine prevents carcinoma cervix. Almost 81 (97.6%) of the girls opined that they would like to get vaccinated while 137 (87.3%) students agreed that they will advice vaccination to others. Low level of awareness was observed among the students.*

### INTRODUCTION

Human papillomavirus (HPV) causes cervical cancer which is the second most common cancer in women worldwide by age-standardized incidence rate (ASR). Cancer of cervix is number one killer cancer among women in India. It is estimated that during 2008, 134420 new cases of cancer occurred in the country and about 72,825 women died of the disease.<sup>1</sup> Cervical cancer is an important cause of preventable cancer-related death among women. Because of the overwhelming burden of this disease in developing countries, cervical cancer is the second most common cause of cancer among women worldwide. Risk factors include multiple sexual partners, early age at first intercourse, and early first pregnancy, Cigarette smoking. DNA related to that found in the human papillomavirus has been identified in cervical dysplasia and carcinoma in situ, both precursor lesions, as well as in invasive cancers and lymph node metastases.<sup>2</sup>

There are currently two vaccines which protect against both HPV 16 and 18, which are known to cause 70% of cervical cancers. Clinical trial results show that both vaccines are safe and very effective in preventing infection with HPV 16 and 18. Two distinct types of vaccines, one manufactured by Merck and Co., Inc. (Whitehouse Station, NJ), namely, Gardasil, and the other manufactured by GlaxoSmithKline (GSK) (Philadelphia), namely, Cervarix, are available for the prevention of the HPV infection. Each vaccine includes HPV types 16 and 18, which account for approximately 70% of all cervical cancers worldwide. The Merck vaccine Gardasil in addition incorporates HPV types 6 and 11, associated with approximately 90% of genital warts.<sup>3</sup> The HPV vaccine is licensed for use among women and girls in the age group of 9 to 26 years. Ideally, females should be vaccinated before their

sexual debut because the vaccine is most effective in women who have not yet acquired any HPV type infection. Vaccine schedule requires three doses to be administered over a period of six months (Gardasil: 0, 2 and 6 months and Cervarix: 0, 1 and 6 months). The dose of the quadrivalent vaccine is 0.5 ml to be administered intramuscularly in the deltoid muscle. The vaccine should be shaken well before use, stored at 2°C to 8°C and should not be frozen.<sup>3</sup>

Despite its high prevalence, awareness of HPV is generally poor in most countries, While knowledge about may be an important determinant for vaccine acceptance. The major obstacles in our country include cost, acceptability, lack of public awareness, infrastructure and concern about unknown sideeffects.<sup>4</sup>The aim of the current study was to assess HPV and HPV vaccine awareness, HPV-related knowledge, and attitudes towards HPV vaccination among medical students who will be practicing clinicians and will play pivotal role in spreading awareness among general population.

### MATERIAL AND METHODS

A cross-sectional study was conducted in August- November months of 2013 to assess the level of awareness about various aspects of HPV infection and vaccine among medical students. Students in 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> term were included in the study. There were total 198 students in these terms. Students who were absent for the class were contacted in the hostels, those who were not available even after four visits were excluded from the study. Permission was taken from the institute to conduct the study.

Students were explained regarding the study and after taking consent they were asked to fill the pretested semi-structure questionnaire. Questionnaire consisted questions regarding carcinoma cervix, HPV

virus and HPV vaccine. For knowledge based questions, a score of either 0 or 1 was assigned to each questions, it ranged from 0 to 12. For the purpose of analysis, those who scored >75% (individuals who answered 9 or more questions) were consider to posses adequate knowledge. For attitude related questions respondents were required to state if they agreed or disagreed. Confidentiality of the student was maintained

Data was analyzed by using Ms- Excel sheet and Epi-info. Percentages and chi-square test was used in the analysis. A probability value of <0.05 was considered significant.

## RESULTS

Among 198 students in third year and final year students, response was collected from 157 students. Among 157 students 74 (47.1%) were males and 83 (52.9%) were females. Students aged between 20 -26 years with a mean age of 21.87±1.096.

According to 109 (69.4%) students carcinoma cervix was the most common cancer in women in India. None of the students knew correct incidence of carcinoma cervix. Almost 137(87.3%) of the students knew HPV was the causative agent for ca cervix but only 115 (73.2%) answered common strains of HPV in causation of ca cervix. About 70 (44.5%) answered HPV as DNA virus. Only 41(26.11%) knew HPV was associated with other cancers.

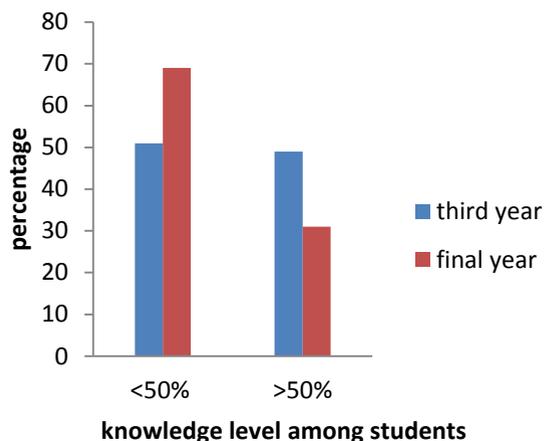
According to 48(30.6%) students HPV spreads by sexual route but 96 (61.1%) students answered HPV spreads by both sexual and non-sexual routes and 13(8.3%) answered HPV spreads by intravenous route. Almost 97(61.8%) students knew that HPV vaccine prevents carcinoma cervix and 51(32.5%) students thought HPV vaccine protects against other cancers. Only 39(28.84%) students knew the correct age of initiation vaccination. Vaccination schedule was known only to 15 (95.5%) students. Only 41(26.1%) of students knew the efficacy of the vaccine and only 10(6.4%) of the students knew mechanism of action of the vaccine. Only 3 could tell the cost of the vaccine. There was no significant difference in knowledge levels among females and males (p= 0.0384)

**Table 1. Distribution according to level of knowledge**

Percentage of knowledge	Number	Percentage
0- 25	38	24.20%
26-50	89	56.69%
56-75	29	18.47%
> 76	1	0.64%
Total	157	100%

**Table 2. Relationship between knowledge and gender**

Knowledge level	Males	Females	Total	$\chi^2=0.7574$ P=0.384
≤ 50%	62 (83.78%)	65 (78.31%)	127 (80.89%)	
>50%	12 (16.22%)	18 (21.69%)	30 (19.11%)	
Total	74 (100%)	83 (100%)	157 (100%)	



**Chart 1: Relationship between knowledge level and year**

**Table 3. Knowledge level among medical students**

Question	Correct answer Number (%)	Incorrect answer Number (%)
Most prevalent cancer among females in India	109(69.4)	48(30.6)
Human papilloma virus is DNA or RNA virus	70(44.5)	87(55.5)
Common strains of HPV causing ca cervix	115(73.2)	42(26.8)
Incidence of ca cervix	59(37.5)	98(62.5)
Can HPV vaccination prevent ca cervix	97(61.7)	60(38.3)
Does HPV vaccine provides protection against other cancers and STI's caused by HPV	51(32.4)	106(67.6)
Age of initiation of HPV vaccine	39(28.84)	118(71.16)
Efficacy of HPV vaccine	38(24.2)	119(75.8)
Schedule for HPV vaccine	0(0)	157(100)
Cost of HPV vaccine	0(0)	157(100)

Almost 81 (97.6%) of the girls opined that they would like to get vaccinated while 137 (87.3%) students agreed that they will advice vaccination to others. Almost 122 (77.7%) wanted HPV vaccine as

a part of national immunization schedule where as 35(22.3%) felt it is not necessary.

## DISCUSSION

Human papillomavirus (HPV) is the most common viral infection of the reproductive tract. Most sexually active women and men will be infected at some point in their lives and some may be repeatedly infected. Cervical cancer is by far the most common HPV-related disease. Nearly all cases of cervical cancer can be attributable to HPV infection.

The development of HPV vaccine represents a huge advancement in the fight against cervical cancer. The quotient of awareness is still very low and has left many myths and misconceptions in the minds of the consumer. Majority of the students in present study knew carcinoma cervix was the most common cancer among women in India. In a study conducted among the students of premier colleges of Kolkata only 20 % knew most prevalent type of cancer among women.<sup>5</sup> None of the medical students in the present study knew the correct incidence of carcinoma cervix in India, similar finding was observed by Mehtha.S et al.<sup>6</sup> Majority of the students were aware of causative factor and viral etiology of the carcinoma cervix but lower level of awareness was observed on risk factors of cancer cervix.

Majority of the student knew HPV vaccine prevents carcinoma cervix. Knowledge regarding age of vaccination, schedule, efficacy and cost was remarkably poor and most of the students opined that they would get vaccinated and advice others. Similarly level of awareness about HPV and HPV vaccine was very low among medical students in Delhi.<sup>6</sup> Higher level of awareness was observed among medical students in Manipal university.<sup>7</sup> The study by Naki et al on the awareness, knowledge and attitudes related to HPV infection and vaccine among non-obstetrician-gynecologist healthcare providers suggested that the HPV related knowledge in the physicians was significantly higher and were more willing to get vaccinated when compared to the non-physician staff.<sup>8</sup> A study conducted by Saha et al in Kolkata revealed a very low level of awareness among the graduate and postgraduate students.<sup>5</sup>

Lower level of knowledge among medical students could be because vaccine against carcinoma cervix is relatively new concept. This indicates recent medical and public health issues should be included in undergraduate curriculum. This study had a limitation that it is not representative all medical students since one medical college was included. Wide spread study should be conducted in different colleges.

**Conflict of Interest:** NONE

**Source of Support:** NIL

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