

STUDY OF AWARENESS ABOUT CERVICAL CANCER, HPV INFECTION AND HPV VACCINE AMONG MEDICAL STUDENTS

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Abstract

Background: Cervical cancer is one of the most common malignancy among women in India. By early detection of pre-cancerous lesions & introduction of vaccine, incidence of disease can be reduced. So, it is necessary to assess the awareness among medical students regarding cancer cervix, HPV infection & HPV vaccine. Aim: To study the awareness about cervical cancer, HPV infection and HPV vaccine among medical students. Methods: Cross-sectional study was conducted among 100 undergraduate medical students aged between 18-25 years from III/1 to III/IV during a period of 6 months in Krishna Institute of Medical Sciences, Karad, Maharashtra, based on 25-point questionnaire regarding cancer cervix, HPV infection & HPV vaccine. Results: Among the students, 95% were aware of the risk factors for the cervical cancer, 38% were aware about screening tests for cervical cancer, 89% students answered that cancer cervix is vaccine preventable. Medical students who were not aware about the age group for giving HPV vaccination was 59%. Awareness about male vaccination was present among 73%. None of the medical students were vaccinated. Conclusion: Even though the awareness about cervical cancer & HPV infection is good among medical students, widespread acceptance of HPV vaccine is not present due inadequate knowledge and awareness regarding HPV vaccine. There is a lack of understanding regarding the cost, availability, extent of protection against cervical cancer & safety conferred by the HPV vaccine.

Keywords: Awareness, cervical cancer, HPV infection, HPV vaccine

Introduction:

Cancer of cervix is the fourth most common cancer affecting women worldwide and the second most common cause of cancer deaths among women in India. According to WHO in 2018 almost 3,11,000 women died from cancer cervix in which more than 85% of the deaths had occurred in low & middle income countries. ^[1] Almost 99% cancer cervix cases are linked to human papilloma virus (HPV) infection, a very common virus which is transmitted through sexual contact. ^[2] Out of more than 100 types of HPV discovered, about 15 to 20 types of HPV have been reported to show oncogenic potential. HPV types 6 and 11 do not cause cancer, they contribute to 90% cases of genital warts. HPV types 16 and 18 cause 70% of cancer cervix and pre-cancerous lesions of cervix. ^[1]

WHO has approved vaccines that protect against HPV 16 and 18 for use in many countries. By clinical trials and post-marketing surveillance it was shown that HPV vaccines are safe and effective in preventing HPV infections. ^[1] It is the only cancer that is preventable through safe & effective vaccination. WHO recommends HPV vaccination for girls age 9-14 years, before they become sexually active as the primary prevention for cervical cancer. ^[1] Cervical screening programmes have contributed

a lot to the decline of cancer cervix in developed countries.^[3] Two vaccines, quadrivalent (HPV 16, 18, 6 and 11) 'Gardasil' and a bivalent (HPV 18 &19) 'Cervarix' are available in India.

According to WHO, by October 2019, almost 100 countries have introduced HPV vaccination in their national immunisation Programme.^[4] In U.S.A and Europe, HPV vaccine is included in National immunization Programme. Vaccine uptake in UK has been excellent, at > 90% for 12–13 year old girls.^[5] Only few among the developing countries where the incidence of cancer cervix is high have included HPV vaccination in their national vaccination programme.^[6] According to WHO, most cost-effective public health measure against cervical cancer is vaccination and is one of the key pillars of a comprehensive strategy for eliminating cervical cancer as a public health issue.^[4]

Knowledge of cervical cancer, HPV infection and HPV vaccine are important among medical students as they are the future physicians and they can play an important role in creating awareness among the common people. The present study was conducted to assess the awareness of medical students regarding the cervical cancer, HPV infection & HPV vaccine.

Materials & Methods:

This was a cross-sectional study, conducted in Krishna Institute of Medical Sciences located at Karad taluka of Western Maharashtra. Sample size was obtained by the formula $4pq/l^2$ with an allowable error (l) of 10, p value of 49% - knowledge regarding the correct age for initiation of HPV vaccination, based on a study from Delhi ^[7], $q=100-p$, sample size was calculated as 99 & this was rounded off to 100.

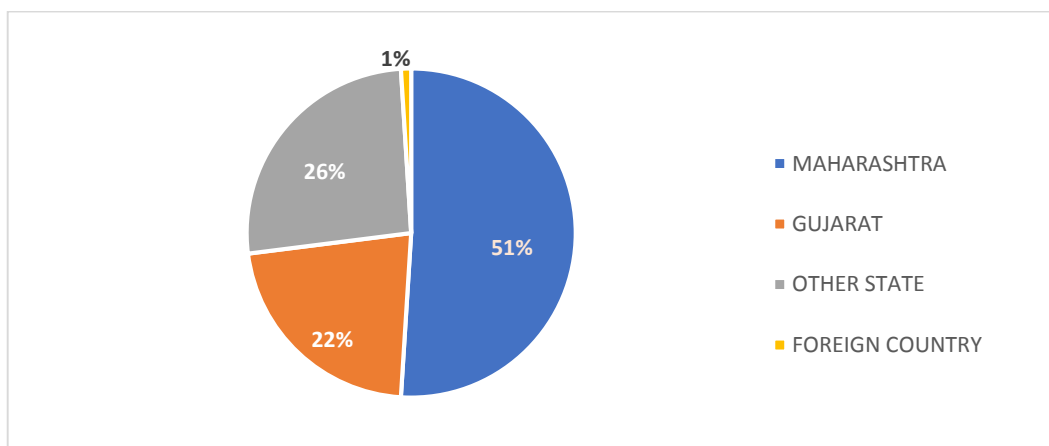
The present study was carried out from July 2019 to December 2019 among 100 medical students between age group 21 to 25 from 3rd & final year MBBS. The study participants were selected by random selection. Ethical clearance was obtained from the Institutional ethical committee.

Self-administered pre-tested, semi-structured 25-point questionnaire on cervical cancer, HPV infection & HPV vaccination was given to each participant after obtaining a written informed consent from them and students were assured of confidentiality of the information. Data was analysed using Microsoft Excel version 16.

Results:

Total 100 medical students aged between 21 to 25 years including 56 males and 44 females of 3rd year and final year MBBS who were unmarried were included in the study. Most of the students were from III/III (59%) followed by III/I (16%), III/II (13%), III/IV (12%). Majority of the students were from Maharashtra (51%), followed by Gujarat (22%), other States (26%) & Foreign country (1%). [Figure1].

Figure1: Statewise distribution of students



Awareness about cancer cervix & HPV infection

Students who knew that the peak incidence of cervical cancer is seen between 40-60 years was 60%. The risk factors for the cervical cancer was known for 95% but only 38% were aware of the different screening tests available for cervical cancer. Knowledge about HPV as a DNA virus was not known to 66%. [Table 1].

Table 1: Awareness about cancer cervix & HPV infection

Parameters	Right answer (%)	Wrong answer(%)
Peak age distribution	60	40
Risk factors	95	5
Screening tests	38	62
HPV is a DNA virus	34	66

Awareness about HPV vaccine & attitude of medical students towards HPV vaccination

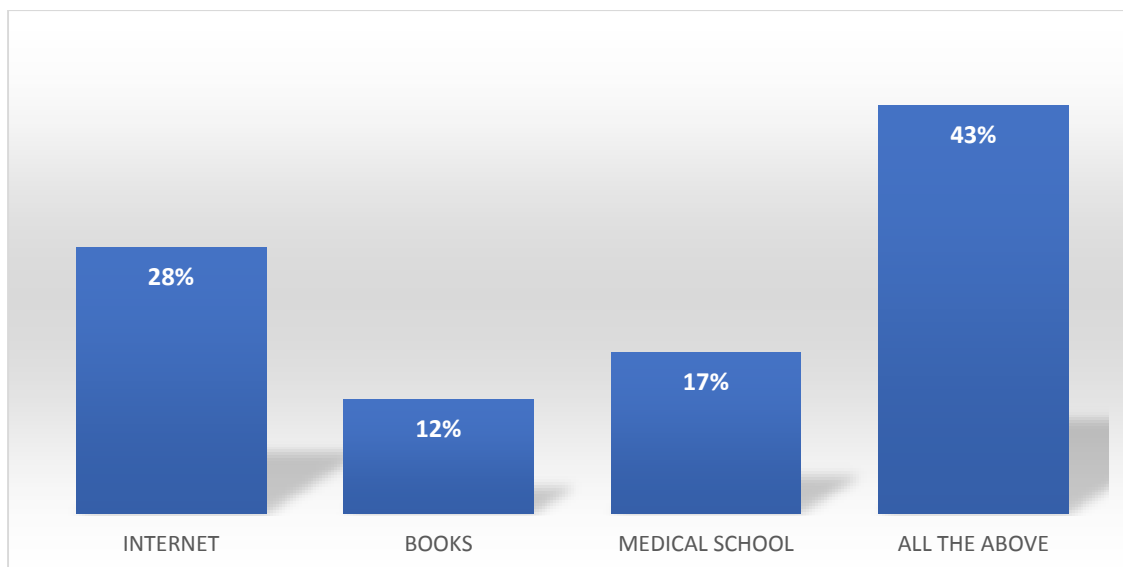
Cancer cervix is vaccine preventable was known to 89% student but the age for giving HPV vaccination was not known for 59% medical students. The vaccination schedule was known to 57% of medical students. Availability of HPV vaccine was unaware for 22%. Awareness about male vaccination was present among 73% students and 60% had heard about the brand names of HPV vaccine. According to 62%, HPV vaccine is not ideally given to already sexually active girls & 42% students answered that it is not safe to have multiple sexual partners after full course of HPV vaccine. Students who were not aware about the cost of HPV vaccine was 54%. [Table 2].

Table 2: Awareness & attitude towards HPV vaccination

Parameters	Right answer (%)	Wrong answer(%)
Vaccine prevents cervical cancer	89	11
Availability in India	75	25
Age group of vaccination	41	59
Vaccination Schedule	57	43
Male vaccination	73	27
Brand names	60	40
Cost of vaccine	46	54

Source of knowledge among medical students about HPV vaccine is from internet (28%), books (12%) & medical school (17%) & 43% answered that all these together are the source of knowledge. [Figure 2]

Figure 2: Source of knowledge about HPV vaccine



In our study none of the medical students were vaccinated. Reasons for not vaccinating was assessed & 55% of the students did not reply (55%) while 25% answered that they do not have multiple sexual partners, 17% were unaware about vaccine & 3% answered that they are not sexually active. [Table 3].

Table 3: Reasons for not vaccinating

Don't have multiple sexual partners	25
Not sexually active	3
Unaware about vaccine	17
Not replied	55

Discussion:

First time in the history of medicine it was found that cancer can be prevented by vaccination. Primary prevention of cervical cancer by HPV vaccination among adolescent girls helps in reducing the occurrence of disease. It is very important to assess the awareness among medical students who play a vital role in the society in creating awareness among general population.

Our study was conducted in Krishna Institute of Medical Sciences located at Karad taluka of Western Maharashtra. Total 100 medical students aged between 21 to 25 years in 3rd & final year MBBS were included in the study.

In the present study, 95% students were aware that HPV is the causative agent for cervical cancer and 89% were aware that cervical cancer is preventable. Similar observation was seen in a study conducted at Delhi among medical students where awareness was 96% & 74% were aware that cervical cancer can be prevented by HPV vaccination.^[7] In contrast, a study conducted in China among medical students, 76.5% had heard of HPV & 48.8% knew that the prevention of cervical cancer was possible through HPV vaccination.^[8] In a study conducted among university students in Turkey, 83.2% of the students stated that they had not heard of HPV previously.^[6]

Brand names of HPV vaccine was heard by 60% in our study. However, none of the students were aware about the cancer-causing HPV types and names of the HPV vaccines in a study conducted by Rashid et al among college students with biology & non-biology academic subject background.^[9]

Awareness regarding the availability of vaccine in India against cervical cancer in our study was 78% while a study among medical students from Andhra Pradesh was 54%.^[10] In our study, 54% students were not aware of cost of vaccination. A study in Delhi showed 70% were not aware of the cost of the vaccine.^[7]

According to 42% students in our study it is not safe to have multiple sexual partners after full course of HPV vaccine while in a study from China, 48.9% respondents thought that it was not safe to have multiple sexual partners after a full course of the vaccine.^[8]

In present study, none of the medical students were vaccinated. A study done at AIMS, Kochi, among medical students 6% of study participants had taken HPV vaccine.^[3] Study conducted in Shimla among medical and nursing students showed that 5.5% of the participants had been vaccinated against HPV.^[11] The study in Turkey, a country with no national vaccination program, only 1.5% of the participating students were vaccinated. Countries having national vaccination program for HPV have higher vaccination rate. For example, in a study from United States 47.3% of the female students and 15.8% of the male students were vaccinated.^[6]

It is almost a decade since HPV vaccine has been introduced & is available since 2008 in India, even then vaccination rate in India is low. It seems several factors like religious views, outlook of society, prejudiced ideas, socioeconomic status & most importantly lack of awareness of HPV vaccination may be the reasons for such a low coverage of HPV vaccination in India.

Source of knowledge among medical students about HPV vaccine in our study was from internet, books & medical school. In China, a study showed school courses were the major source of knowledge about HPV vaccination, followed by the Internet/television, hospital, publications (including books, newspapers, and magazines), and family/friends.^[8]

Many studies have been conducted in India & throughout the world in order to analyse the awareness about cancer cervix and HPV among young women in rural and urban areas. According to these reports that awareness and knowledge about cervical cancer is very poor among both undergraduate and postgraduate students.^[9]

Clinicians with good knowledge regarding HPV are more likely to recommend HPV vaccine. Medical students being the future health professionals, it is essential to understand whether they are well-informed regarding HPV infection, cervical cancer, and HPV vaccine as they can provide reliable information and help the public to make right decisions in the near future.

Conclusion:

Even though the knowledge about cervical cancer & HPV infection is good among medical students in our study, awareness regarding HPV vaccine lacks behind due to which widespread acceptance for HPV vaccine is also not seen. Knowledge regarding HPV vaccine is essential among medical students as they are the future physicians who can create awareness in the community. Proper awareness about vaccine safety, vaccine efficacy, cost of vaccination is to be given among medical students. Integrated teaching regarding cancer cervix, HPV infection & HPV vaccine should need to be introduced. Awareness programmes that emphasise on cervical cancer, its risk factors, available screening modalities and its prevention through vaccination could go long way in checking cervical cancer.

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