Human Papiloma Virus Vaccination: Knowledge, Attitude and Practice Among Medical Students at Tertiary Care Hospital

Dr Kruti Deliwala[1] , Dr Mittal Bhabhor[2*], Dr Prakash Prajapati[3],Dr Jayun Joshi[4], Dr Bhargavi Khatri[5], Dr Megha Patel[6]

[1]Associate Professor,Department of Obs and Gynec,NHL Medical College,Ahmedabad
[2]Assistant Professor,Department of Obs and Gynec, Narendra Modi Medical College,Ahmedabad
[3]Associate Professor,Department of Obs and Gynec,Narendra Modi Medical College,Ahmedabad
[4]Associate Professor,Department of Obs and Gynec,NHL Medical College, Ahmedabad
[5]2nd yearResident, Departmerntof Obs and Gynec,Narendra Modi Medical College,Ahmedabad
[6]Professor, Department of Obs and Gynec,Narendra Modi Medical College,Ahmedabad

***Corresponding Author:Dr Mittal Bhabhor**
Email:mittaldamor77@gmail.com
DOI:10.56018/2023064

Abstract

Background: Cervical cancer is the leading cause of death in India. HPV virus is a major infectious etiological factor of cervical cancer. It has been proven that HPV vaccine, if taken before initiation of sexual life, is highly effective in HPV and cervical cancer prevention. Despite its availability, deaths due to cervical cancer has increased rapidly. Healthcare workers, especially the young medical students can play a significant role in recommendation of HPV vaccination among people. So, this study was conducted to study the knowledge, attitude and practices of HPV infection and vaccination among medical students. **Methodology:** A cross -sectional observational study was conducted in medical students of Narendra Modi Medical College. Three hundred medical students were requested to fill a questionnaire which covered demographic details, knowledge, attitude and practice towards HPV vaccination for cervical cancer prevention. **Results:**82.66% of students were aware about the HPV infection out of which 71% of the participants knew that cervical cancer can be prevented by HPV vaccine, 66.66% of studentes aware of the availability and 35% were well aware about the correct schedule/dosage of vaccination. **Conclusion**: Though the knowledge and attitude about the HPV infection and its vaccination is good among the medical students, but the practice of vaccination is poor.
Keywords: HPV – Human Papilloma Virus, Knowledge, Attitude, Practice, HPV vaccine, medical students

Introduction

Cervical cancer is one of the most common cancers in women worldwide. India accounts for one-fifth of the world burden for cancer. The incidence rate of cervical cancer in Indian women is 26.1-43.8% [1] and accounting for more than 74000 deaths of women per year [2,3] .

Carcinoma cervix is one of the few malignancies where an etiological agent has been identified and is totally preventable through vaccination. Natural infections with HPV induce a weak immune response which may not be protective whereas vaccination results in a strong immune response. Though more than 140 types of HPV have been identified only about 40 types are sexually transmitted. Out Of these, two high risk HPV types 16 and HPV 18 are responsible for more than 80% of cervical cancer

in India.[4,5,6,7] Prevention of HPV would ,therefore, reduce the incidence of cervical cancers as well as genital warts, along with mortality and morbidity and costs associated with these diseases. For primary prevention, two vaccines, a quadrivalent (HPV 16,18,6,11) named 'Gardasil' and bivalent (HPV 19,18) named 'Cervarix' [8,9] have been available for vaccinating young adolescent girls and females of reproductive age group [10]. These two vaccines were US FDA (food and drug administration) approved and are commercially available in India. India has not yet introduced HPV vaccination in the national immunization program. Vaccination is voluntary and so depends on the awareness regarding its availability and its advantages.

Healthcare provider in hospitals and PHCs including the medical students constitute the most visible, front-line personnel providing health education to patients and the general population. So, this study was conducted to study the knowledge, attitude and practice about HPV infection and its vaccination.

Material and Methods

This was an observational cross-sectional study conducted from November 2022 to December 2022 among medical students of Narendra Modi Medical Coll. All the medical students and interns who gave consent for the study were included as study participants. Those who did not wish to participate and those students who could not be contacted even after 3 attempts were excluded. A predesigned, pretested questionnaire was given to the students, which consist of questions related todemographic characteristics, knowledge, attitude and practice towards HPV vaccination for cervical cancer prevention.

The undergraduate (UGs) students were contacted after the theory classes and were given a questionnaire. Similarly the questionnaire was got filled by interns during their posting hours in gynec department. A duration of 10-15 minutes was given to fill the questionnaire.Students were asked to mark single response,YES/NO/Don't know options.After the data collection was completed,we received 300 filled proformas and were analysed. Confidentiality of the participants were ensured.

Statistical analysis

All the data collected was entered in Microsoft excel 2013 and analysed using SPSS (17.0), which include numbers and percentages.

Results

Out of a total of 300 students interviewed, the number of girls were 162 and 138 boys, they were again categorised based on their age group into younger (17-19 years) and older (>19years).

As presented in table 2, majority of students were from 1st year that were 29% followed by 3rd1st year 21%, interns 20%, 2nd year 18%, least were from final year 12%.

Only correct responses obtained from the participants regarding the HPV infection and HPV vaccination were presented in the Table 3. Out of the 300 participants 248 students (82.66%) were aware that HPV infection as causal factor for cervical cancer, 72.33% of the students knew how the HPV virus was transmitted,64% knew that both the genders could be affected and 74% were aware about ,there was no medication for HPV infection. 71% of the participants knew that cervical cancer can be prevented by HPV vaccine, 66% of the students were aware of its availability,64% students belived it is safe . The sources of information regarding the HPV vaccine were largely through classes and textbooks (63%), followed by communication with the doctors or the health care facility (19%) and also through mass media (11%) and least was through family/friends (7%) (Figure 1).In table 4 ,Out of the 162 girls who expressed their interest in vaccination were only 107 (70%) whereas 62% of male felt the need to be get vaccinated. Only 30% of girlswere vaccinated. In our study 73.33% of students positively responded they would encourage their family members to get vaccinated.

Table 1 : Demographic characteristics of the participants (N=300)

Gender	**Frequency**	**Percentage(%)**
Male	138	46
Female	162	54
Age group(in years)		
17-19	156	52
>19	144	48

Table 2 : Composition of the study participants among the participants

Year	**Male**	**Female**	**Total**	**Percentage**
1st	32	55	87	29%
2nd	26	28	54	18%
3rd 1st	35	28	63	21%
Final	16	20	36	12%
Interns	23	37	60	20%
Total	132(44%)	168(56%)	N=300	100%

Table 3 : Questionnaire based response of the participant about knowledge of HPV infection and vaccination (N=300)

HPV infection	**Male**	**Female**	**Total correct responses**	**%**
Can the HPV causes cervical cancer ?	120	128	248	82.66
Is the HPV virus sexually transmitted ?	102	115	217	72.33
Can HPV infect both men and woman ?	110	152	192	64
Is HPV cured by medication?	116	118	224	74.66
Is HPV a self limiting disease	100	105	138	46
Is HPV identified by investigation	102	119	221	73.66
Does HPV infection cause any symptoms in women?	90	102	192	64
HPV Vaccination				
Can cervical cancer be prevented by a vaccine ?	100	123	213	71
Is HPV vaccine available in India ?	90	110	200	66.66
Is HPV vaccine part of a national programme ?	130	152	282	94
Is HPV vaccine Safe and effective?	102	121	194	71
Is it protective for sexual partner?	98	90	188	62.66
Number of doses of HPV vaccine	45	60	105	35
What is the ideal time and age for vaccination	49	50	99	33

Figure 1 : sources of information regarding the HPV vaccination

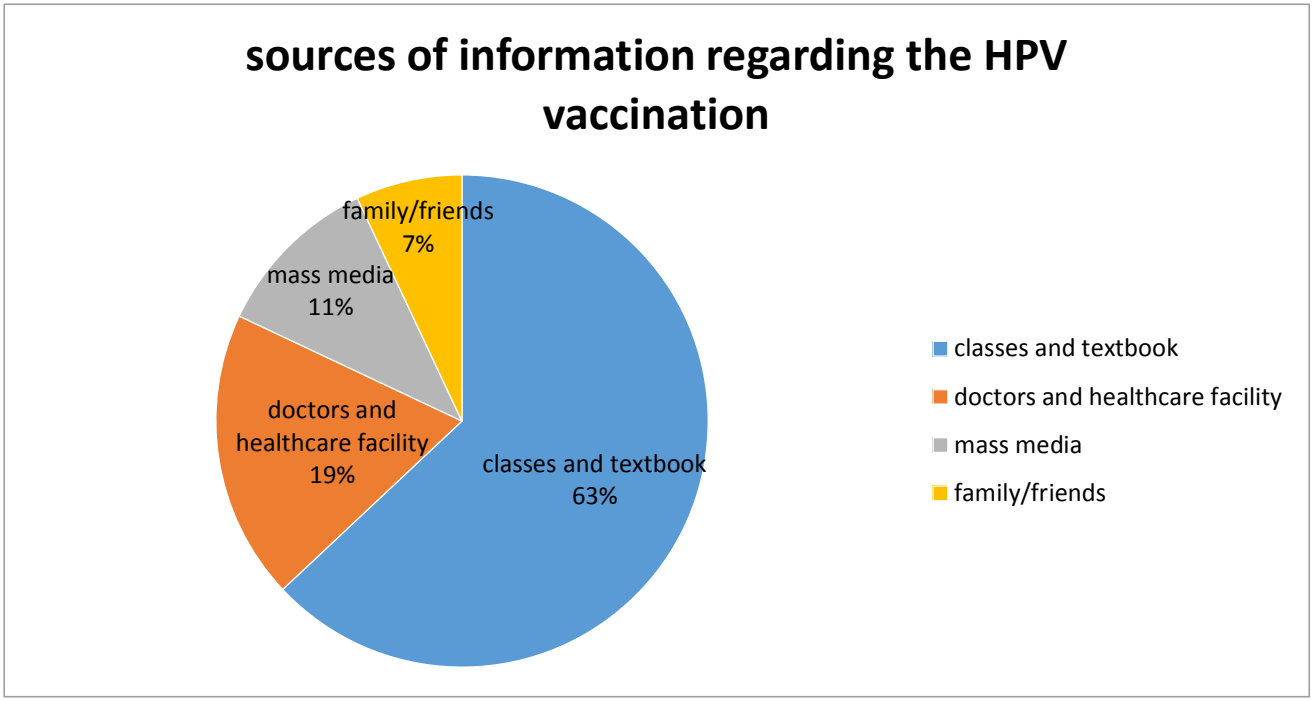

Table 4 : Attitude and practice of medical students towards HPV Vaccination

Attitude and practice	Male	Female	Total	%
Do you feel to be get vaccinated ?	86(62%)	107(70%)	193	64.33
Are you vaccinated?	0	54 (30%)	54	30
Would you recommended HPV Vaccine to your family and friends ?	100(72.46%)	120(74%)	220	73.33

Discussion

Cevical cancer is one of the preventable cancer by vaccination caused primarily by HPV infection. In the present study, there were 54% of female and 46% male medical students, none of the participants were married at the time of our study and more than half the participants (52%) were aged between 17-19 years which was appropriate age to get vaccinated for HPV.

Among the study participants 82.66% were aware of the HPV infection in our study may cause cervical cancer in women,which was high compared to a study conducted by Mehta et al (50%), Kamini et al (54.5%), Panday et al (81.5%) and it was low compared to the study held by Joshi et al (96%)[11,12,13,14]. In our study, 71% of the participants were aware about the HPV vaccination which was closer compared to studies held by Deriemaeker et al (80%)[15], Mehta et al (82%)[11] as sample size was low in their studies. The same finding was high compared to a study carried out by Kamini et al

(63.6%)[12], Montgomerry et al (36%)[16] which can be attributed to the fact that our participants were medical students who acquire knowledge through teaching.

Although 66.66% students aware that vaccination against HPV available in India and but only 35% knew about the correct doses and 33% knew about ideal time and age for vaccination, which shows the lack of knowledge of students towards HPV vaccination. Because of this lack of knowledge, they will not be able to motivate the general population for vaccination against HPV.

In our study we found that majority of the students 71% considered vaccine to be safe and effective. The results were less as compared to the study done in Vietnam in which 92.5% considered vaccine to be safe and effective.[3]This may be due to inappropriate marketing of the vaccine by pharmaceutical companies in India. Total 66.6% students responded that HPV vaccination can be protective for both sexual partners as well. This is a very important aspect of HPV vaccination to be explained to the general population while counseling for HPV vaccination.

The need for vaccinating was felt by 64.33% of our participants which was equivalent as compared to Kamini et al (53.3%).[12] Kamini et al[12], Mehta et al[11] and Joshi et al[14] reported that 64.9%, 66.8% and 67.8% were willing to accept the HPV vaccine respectively.Among the participants , only 30% female students were vaccinated,which was due to lack of knowledge which again emphasizes that without proper knowledge the practice of even medical students is very low. The knowledge among general population will be very low as compared to the medical students which is a major concern for health care provider, particularly in rural and sub-urban population.

In our study, sources of information was mainly classes and textbook (63%) then doctors and health care facilities (19%) followed by mass media(11%) and 7% from family friends. Same was reported by Panday et al (42.9%)[13]and Kamini et al.[12] Mass/media was the main source of information in a study conducted by Joshi et al (53.4%) where as in our study it was only 11%.

Shetty et al found that 68.35 of their participants would encourage their family and friends for vaccination which was almost same to our study finding (73.33%)[17]which is very positive attitude towards HPV vaccine.

Conclusion

Hereby, we conclude that students of Narendra Modi Medical College have good knowledge of cervical cancer and HPV vaccine, but the practice of vaccination is poor. This requires health care professionals to take special interest to motivate medical students for vaccination and also, there is need of inclusion of HPV Vaccination in national immunisation programme to decrease the disease burden in future.

References

1. Duenas-Gonzalez A, Serrano-Olvera A, Cetina L, Coronel J. New molecular targets against cervical cancer. Int J Womens Health. 2014; 6: 1023–31. doi: 10.2147/IJWH.S49471 PMID: 25525394
2. Dikshit R, Gupta PC, Ramasundarahettige C, Gajalakshmi V, Aleksandrowicz L, Badwe R, et al. Cancer mortality in India: A nationally representative survey. Lancet. 2012; 379: 1807–1816. doi: 10.1016/ S0140-6736(12)60358-4 PMID: 22460346
3. Tran BX,ThanPT,DoanTT,NguyenHL,MaiHT,NguyenTH,etal.Knowledge, attitude and practice on and willingness to pay for HPV vaccine:a cross-sectional study in Hanoi,Vietnam.Pat Prefer Adher.2018;12:945.
4. Lowy DR, Schiller JT. Reducing HPV-associated cancer globally. Cancer Prev Res (Phila). 2012; 5: 18–23. doi: 10.1158/1940-6207.CAPR-11-0542 PMID: 22219162
5. Das BC, Gopalkrishna V, Sharma JK, Roy M, Luthra UK. Human papillomavirus DNA in urine of women with preneoplastic and neoplastic cervical lesions. Lancet (London, England). 1992; 340: 1417–8. Available: http://www.ncbi.nlm.nih.gov/pubmed/1360129
6. Pillai RM, Babu JM, Jissa VT, Lakshmi S, Chiplunkar S V, Patkar M, et al. Region-wise distribution of high-risk human papillomavirus types in squamous cell carcinomas of the cervix in India. Int J Gynecol Cancer. 2010; 20: 1046–51. doi: 10.1111/IGC.0b013e3181e02fe0 PMID: 20683415
7. Kerkar SC, Latta S, Salvi V, Mania-Pramanik J. Human Papillomavirus infection in asymptomatic population. Sex ReprodHealthc. 2011; 2: 7–11. doi: 10.1016/j.srhc
8. Harper DM, Franco EL, Wheeler C, Ferris DG, Jenkins D, Schuind A, et al. Efficacy of a bivalent L1 virus-like particle vaccine in prevention of infection with human papillomavirus types 16 and 18 in young women: a randomised controlled trial. Lancet (London, England). 364: 1757–65. doi: 10.1016/S0140- 6736(04)17398-4

9. Villa LL, Costa RLR, Petta CA, Andrade RP, Ault KA, Giuliano AR, et al. Prophylactic quadrivalent human papillomavirus (types 6, 11, 16, and 18) L1 virus-like particle vaccine in young women: a randomised double-blind placebo-controlled multicentre phase II efficacy trial. Lancet Oncol. 2005; 6: 271–8. doi: 10.1016/S1470-2045(05)70101-7 PMID: 15863374
10. Markowitz LE, Dunne EF, Saraiya M, Lawson HW, Chesson H, Unger ER, et al. Quadrivalent Human Papillomavirus Vaccine: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep. 2007; 56: 1–24. Available: http://www.ncbi.nlm.nih.gov/pubmed/17380109
11. Mehta S, Rajaram S, Goel G, Goel N. Awareness about Human Papilloma Virus and its vaccine among medical students. Indian J Community Med. 2013;38(2):92-4.
12. Kamini S, Bhimarashetty DM. Awareness about human papilloma virus vaccine among medical students. Asian J Med Sci. 2016;7(4):67-7.
13. Pandey D, Vanya V, Bhagat S, Vs B, Shetty J. Awareness and Attitude towards Human Papillomavirus (HPV) Vaccine among Medical Students in a Premier Medical School in India. PLoS One. 2012;7(7):40619.
14. Joshi AD, Bhagat SB, Patil KC, Gambre RS, Patel SB. To evaluate the awareness about human papilloma (HPV) vaccine in the prevention of cervical cancer amongst the medical students: A KAP study. Int J Allied Med Sci Clin Res. 2014;2(4):358-66.
15. Deriemaeker H, Michielsen D, Reichman G, Devroey D, Cammu H. Knowledge about human papillomavirus and the human papillomavirus vaccine in Belgian students. Cent European J Urol. 2014;67(4):410-7.
16. Montgomery MP, Dune T, Shetty PK, Shetty AK. Knowledge and acceptability of human papillomavirus vaccination and cervical cancer screening among women in Karnataka, India. J Cancer Educ. 2015;30(1):130-7.
17. Shetty S, Prabhu S, Shetty V, Shetty AK. Knowledge, attitudes and factors associated with acceptability of human papillomavirus vaccination among undergraduate medical, dental and nursing students in South India. Hum VaccinImmunother. 2019;15(7-8):1656-65.