

AWARENESS AND ATTITUDE TOWARDS HPV VACCINATION AMONG MEDICAL AND NURSING STUDENTS IN A TERTIARY CARE TEACHING HOSPITAL IN INDIA

Obstetrics & Gynaecology

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ABSTRACT

Background: The objective of the study was to determine the awareness and attitude towards HPV vaccination among medical and nursing students. **Methods:** A descriptive cross sectional study was done among final MBBS part 2 and final year BSC nursing students with a pretested questionnaire about HPV vaccine. **Results:** About 79.3% students were aware of the availability of HPV vaccine. 69.8% knew the correct age of vaccination. 25.8% of the students have been vaccinated with HPV vaccine. About 72.4% students were willing to advice or receive vaccine which was more among medical students compared to nursing students (p value < 0.05). High cost and inadequate information were stated as the main obstacle preventing vaccination. **Conclusion:** Lack of awareness among medical and paramedical students can be detrimental to the health of society. So, there is need to increase awareness and improve vaccination status among future health care providers against Human papilloma virus.

KEYWORDS

Awareness, attitude, HPV vaccine, medical students

INTRODUCTION :

HPV is the commonest sexually transmitted infection and the resultant diseases have significant morbidity and mortality¹. There are more than 100 types of HPV, of which atleast 14 are cancer causing. Two types 16 and 18 cause 70% of cervical cancers and precancerous cervical lesions². There is also evidence linking HPV with cancers of anus, vulva, vagina, penis, and oropharynx.

Cervical cancer is the second most common cancer among women aged 15 to 44 years in the world. Current estimates indicate that every year 569,847 women are diagnosed with cervical cancer and 311,365 die from the disease. Age standard incidence rate of cervical cancer cases attribute to HPV in INDIA -14.7 (estimates for 2018)³. Underdeveloped and developing countries bear more than 80% of the global cervical cancer burden (WHO, 2010). The high mortality rate from cervical cancer globally could be reduced by effective interventions. Primary prevention begins with HPV vaccination of girls aged 9-14 years, before they become sexually active. Prophylactic HPV vaccines were developed to target the commonest high and low risk HPV genotypes. Two such vaccines were first licensed for clinical use in 2006 following phase-3 clinical trials, which showed efficacy, safety and immunogenicity against vaccine related HPV types^{4,5,6,7}.

Currently available vaccines now include bivalent (targets HPV 16/18) (4,5), quadrivalent (targets HPV 16/18/6/11)^{6,7} and nonavalent (targets HPV 16/18/6/11 as well as five next most oncogenic types found in cervical cancer, 31/33/45/52/58)⁸. Clinical trials indicated efficacy of the vaccines against HPV types included in the respective vaccines as well as some modest cross protection against some non-vaccine but phylogenetically related strains (HPV 31, 33 for HPV 16 related types and HPV 45 for HPV 18 related types)⁴. Two types of recombinant vaccines against HPV have been approved for use in India marketed as Gardasil and Cervarix⁹.

The FUTURE trials have demonstrated an efficacy of 91-100%¹⁰. The HPV vaccine is recommended by the Indian Academy of Paediatrics and FOGSI for all females who can afford the vaccine⁹. Although females have been the primary target of HPV vaccine, extending the program towards males would confer an even greater benefit in settings where female vaccination rates are low. Despite of this, the availability of the vaccine is hardly known and seldom utilized. Lack of awareness is a matter of concern as one of the ways which can be addressed to decrease the burden of cervical cancer and also by mass vaccination against HPV and mass screening programs¹¹.

For the public to be aware, it is essential to increase awareness among health care professionals as well as medical and nursing students. The availability of these vaccines is hardly known and seldom utilised even

among medical fraternity .

AIM:

This study aims to analyse the awareness and acceptability of HPV vaccination among the immediate health care providers, so that they can be sensitized first to extend benefit to the society.

MATERIALS AND METHODS :

A descriptive cross sectional study was conducted from December 2020 to January 2021 to know the awareness and attitude towards HPV vaccine and status of HPV vaccination among medical and nursing students in a tertiary care teaching hospital in Andhra Pradesh, India.

Medical students of final MBBS Part 2, final year BSC nursing students are included in the study after taking informed consent. Students who are not willing to participate in the study is the only exclusion criteria.

A pretested questionnaire was administered to the students of final MBBS part 2 and final BSC nursing students. The students who were present on that day were taken into consideration. The students were assured of confidentiality of information and questionnaire was given after obtaining their consent. The filled forms were collected immediately.

ANALYSIS:

Analysis was done based on study variables like knowledge and awareness about HPV infection and vaccine, attitude towards HPV vaccination and prevalence of vaccination among study population. Standard error of difference between proportions was applied to know the significance of difference in results between medical and nursing students. p value of less than 0.05 was considered as statistically significant.

RESULTS:

A total of 140 students were given questionnaire, out of which 24 were incomplete and hence they were excluded from the study. The study sample consisted of 116 students out of which 70 were medical students and 46 were nursing students. Their age ranged between 18-25 years. All of them were unmarried. Males formed 26 (22.4%) and females 85 (73.2%) of study population.

Knowledge Regarding HPV Vaccine :

Out of 116 students who were included in this study, 92 (79.3%) subjects were aware of availability of HPV vaccines. Out of this, 65 (92.8%) were medical students and 27 (58.6%) were nursing students with p value < 0.05. About 81 (69.8%) subjects answered correctly about the age group in whom the vaccine can be administered

out of which 57 subjects were medical students and 24 were nursing students with p value <0.05 . This shows that the awareness among medical students is more when compared to nursing students and there is significant lag in the knowledge of nursing students. All students who were aware of availability of vaccine were also well aware of HPV vaccine dosage schedule with no much difference between medical and nursing students with p value >0.05 . Only 50 % of the students were aware about requirement of cervical cancer screening even after vaccination. Only 53 (45.6%) answered correctly about efficacy of the vaccine in preventing cervical cancer with no much difference among medical and nursing students.

Attitude Towards HPV Vaccination:

Out of 116 students, only 13 (25.8%) received vaccine with no much difference between medical and nursing students (p value >0.05). Medical students (85.7%) were more willing to receive vaccine when compared to nursing students (52.1%) with p value <0.05 .

Table 1. Knowledge Regarding HPV Vaccine

correct answer regarding HPV vaccination	Medical (n=70)	Nursing (n=46)	Total (n=116)	P VALUE
Is there any vaccine available for cervical cancer	65 92.8 %	27 58.6 %	92 79.3 %	<0.05
Which age group can receive HPV vaccine	57 81.4 %	24 52.1 %	81 69.8 %	<0.05
Can it be given to boys	45 64.2 %	20 43.4 %	65 56 %	<0.05
Can it be given to sexually active girls	49 70 %	19 41.3 %	68 58. %	<0.05
Do women need to be screened for HPV before vaccination	24 34.2 %	7 15.2 %	31 26. %	<0.05
Can it be given to woman already having infection	30 42.8 %	27 58.6 %	57 49.1 %	>0.05
How many doses of HPV vaccine are required	59 84.2 %	39 84.7 %	98 84.4 %	>0.05
Is it safe to have multiple sexual partners after full course of HPV vaccine	26 56.5 %	63 90 %	89 76.7 %	<0.05
Is it safe to have sex without condoms after HPV vaccine	44 62.8 %	24 52.1 %	68 58.6 %	>0.05
Do girls/women who have already been vaccinated, require cervical cancer screening	57 81.4 %	33 71.7 %	60 51.7 %	>0.05
Cervical cancer protection provided by HPV vaccine	34 48.5 %	19 41.3 %	53 45.6 %	>0.05

Table 2. Attitude Towards HPV Vaccination

Correct answer regarding HPV vaccination	Medical (n=70)	Nursing (n=46)	Total (n=116)	P value
Have you received HPV vaccine	5 7.14 %	8 17.3 %	13 25.8 %	>0.05
If no, would you like to receive / advice HPV vaccine.	60 85.7 %	24 52.1 %	84 72.4 %	<0.05
Has any friends / family have sought your opinion till now regarding HPV vaccination.	33 47.1 %	8 17.3 %	41 35.3 %	<0.05
Would you like yourself to be educated by experts	65 92.8 %	41 89.1 %	106 91.3 %	<0.05

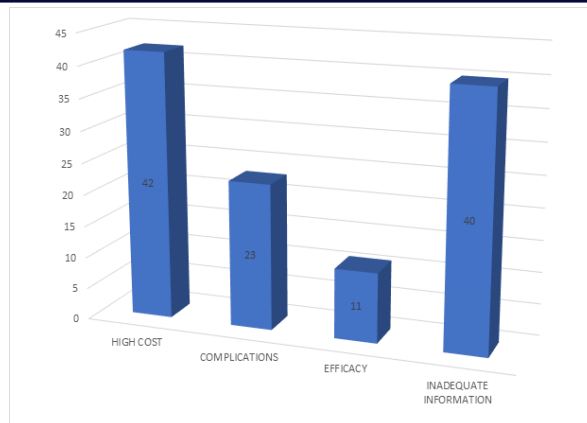


CHART 1. Obstacles Preventing HPV Vaccination:

Majority of students about 42, answered high cost and about 40 students answered inadequate information was the most important factor preventing them from getting vaccinated. Other obstacles being fear of complications and lack of awareness regarding efficacy of vaccine.

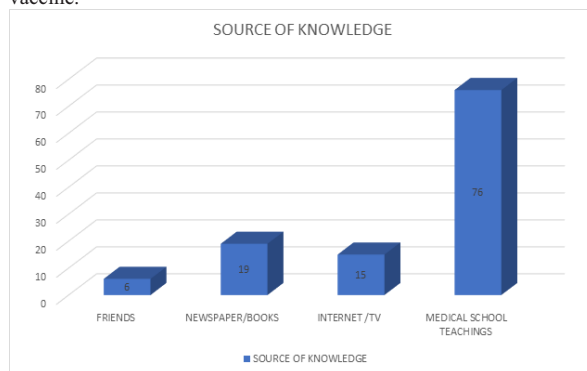


CHART 2. Sources Of Knowledge Regarding HPV Vaccine

The most important source of knowledge and information on HPV vaccination is medical school teaching about 65.5%. Others being from newspaper and books about 16.3% and from internet and TV about 12.9% and from friends about 5.17%.

DISCUSSION:

Cervical cancer is the second most common Gynaecological cancer. Human Papilloma virus HPV types 16 and 18 have been proved as main cause of cervical cancer accounting for $>95\%$. Inspite of many clinical trials and studies on HPV 16 and 18 vaccination and its efficacy, its potential output in reducing the burden of cervical cancer, the uptake of HPV vaccination is very low in developing countries including India. The main reasons being high cost, inadequate information, poor knowledge about the vaccine.

In our study about 79.3% (92) students were well aware of the HPV vaccination, majority being medical students about 92.8% with p value 0.00001. Similar results were seen in K Swarnapriya et al study¹² done among medical and paramedical students in India where 86.4% were aware of HPV vaccine. But unfortunately, despite good awareness only 7.14% (5) were vaccinated out of 70 medical students. This is similar to Sharma et al study¹³ which was done among undergraduate medical students, where out of 143 female students only 10.4% received the vaccine. In our study 69.8% answered correctly about the age group in whom the HPV vaccine can be administered, where as in a study by K Swarnapriya et al¹² it was only 52%. It was 57.1% with p value >0.05 in a study by Sharma et al¹⁴ done among undergraduate medical students.

In our study 56 % answered correctly about administration of HPV vaccine to males which was slightly higher than the study done by K Swarnapriya et al¹² where it was 44.4%.

In our study 45.6% answered correctly about the efficacy of HPV vaccine where as it is only 17.9% in a study by K Swarnapriya et al¹².

In our study 25.8% received the vaccination which is higher when compared to a study by K Swarnapriya et al¹² where only 6.8% of them had received the vaccination. In a study by Sharma et al¹³, out of 143 female students only 15(10.4%) had received the vaccine. In another study from Rajasthan among medical students, 6.25% of them had vaccinated. Similar acceptance rate of 6% and 10% was observed in two different medical colleges of India. A slightly higher rate noted in Brazilian study where it was 21.1 %.

The willingness to advice/receive the vaccine was 72.4% in our study which is slightly higher than the study by K Swarnapriya et al¹² where it was 51.46%. similar results were observed in studies by Mehta et al⁷ it was 66.8 % and 64% by Kamini et al¹⁴, 88% in Sharma et al¹³.

In our study 51.7% answered correctly regarding the requirement of cervical cancer screening in those who have already been vaccinated. A very few studies were available on this data.

CONCLUSION:

The present study reports that more than half of the students were aware of HPV vaccine, majority being medical students reflecting that the medical curriculum does play a role in spreading awareness. Thus we recommend integration of Topics about HPV and its vaccine in the curriculum. Despite good awareness among medical students when compared to nursing students, very less number of them received vaccination, the main reason being the high cost of vaccine and inadequate information about vaccine. However the attitude of majority of students towards receiving vaccination and willingness to get educated regarding vaccination was positive. Thus we recommend health educational programmes and group discussions where HPV infection, cervical cancer, and its vaccine are discussed which may help in improvement of knowledge regarding HPV and HPV vaccine acceptability. Limitations of the study is small sample size and only final year students were included in this study. Further studies may focus on all adolescent age group in medical, dental and paramedical colleges to improve awareness among them. This would indirectly increase the acceptance of HPV vaccine in the community as well.

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REFERENCES:

- Human papillomavirus vaccination: the population impact, Lai-Yang Lee et al, PMID:28663791, PMCID:PMC 5473416, F1000Res.2017 Jun 12;6:866.doi-10.12688/f1000research.10691.1.e collection 2017.
- Castellsagué X. Natural history and epidemiology of HPV infection and cervical cancer. *Gynecologic oncology* 2008; 110(3): S4-S7.
- Human Papillomavirus and related Diseases Report [online]. Available from: URL: www.hpvcentre.net/statistics/reports/XWX.pdf
- Diaz M, Kim JJ, Albero G, De Sanjosé S, Clifford G, Bosch FX and Goldie SJ. Health and economic impact of HPV 16 and 18 vaccination and cervical cancer screening in India. *British journal of cancer* 2008; 99(2): 230-238.
- Ramavath KK and Olyai R. Knowledge and Awareness of HPV Infection and Vaccination Among Urban Adolescents in India: A Cross-Sectional Study. *The Journal of Obstetrics and Gynecology of India* 2013; 63(6): 399-404.
- Siddharthar J, Rajkumar B and Deivasigamani K. Knowledge, Awareness and Prevention of Cervical Cancer among Women Attending a Tertiary Care Hospital in Puducherry, India. *Journal of clinical and diagnostic research: JCDR* 2014; 8(6): OC01.
- Mehta S, Rajaram S, Goel G and Goel N. Awareness about Human Papilloma Virus and its vaccine among medical students. *Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine* 2013; 38(2): 92.
- Pandey D, Vanya V, Bhagat S and 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): e40619
- Indian Academy of Pediatrics Committee on Immunization IAPCOI. Consensus recommendations on immunization, 2008. *Indian Pediatrics* 2008; 45(8):635.
- Future II Study Group. Prophylactic efficacy of a quadrivalent human papillomavirus (HPV) vaccine in women with virological evidence of HPV infection. *Journal of Infectious Diseases* 2007; 196(10): 1438-1446
- Basu P, Banerjee D, Singh P, Bhattacharya C and Biswas J. Efficacy and safety of human papillomavirus vaccine for primary prevention of cervical cancer: A review of evidence from phase III trials and national programs. *South Asian journal of cancer* 2013; 2(4):187.
- Knowledge, Attitude and Practices Regarding HPV Vaccination Among Medical and Para Medical in Students, India a Cross Sectional Study, K.Swarnapriya et al, January 2016, *Asian Pacific journal of cancer prevention: APJCP* 16(18):8473-847; DOI:10.7314/APJCP.2015.16.18.8473.
- Assessment of understanding about human papilloma virus vaccination among undergraduate medical students in a developing country: Perspective from India, Charu sharma et al, *J Family Med Prim Care*.2020 Aug 25;9(8):4311-4316, PMID: 33110851 PMCID:PMC7586611 DOI: 10.4103/jfmpe.jfmpe_893_20.
- Awareness about human papilloma virus vaccine among medical students, Snigdha Kamini et al, *Asian journal of medical sciences/Jul-Aug 2016/vol 7/Issue 4*, DOI:10.3126/ajms.v7i4.14613.